Prepared for:

Washington State Transportation Commission

2008 Ferry Customer Survey

Final Report
Executive Summary

Prepared by:

ORC Opinion Research Corporation

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STATE OF WASHINGTON
TRANSPORTATION COMMISSION
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November 17, 2008

The Honorable Christine Gregoire
Office of the Governor
PO Box 40002
Olympia, WA 98504-0002

The Honorable Members
Senate Transportation Committee
PO Box 40482
Olympia, WA 98504-0482

The Honorable Members
House Transportation Committee
PO Box 40600
Olympia, WA 98504-0600

Dear Governor Gregoire, Senators, and Representatives:

The Washington State Transportation Commission (WSTC) is pleased to transmit the completed findings and analysis from our 2008 Ferry Customer Survey. This is the first time a comprehensive survey of ferry customers has been conducted. The WSTC will continue this effort as a biennial effort as mandated under current law.

This survey effort took one year to complete and was comprised of five research components:

1. **Qualitative Research** - Focus groups representing riders on all routes were conducted in November and December 2007. The information gathered in the focus groups were used to shape the questions contained in the on-board surveys. Nearly 80 ferry customers participated in the groups - most were commuters or frequent riders and represented a mix of those who drive and walk onto the ferries.
2. **On-Board Surveys -** Two waves of surveying were done on-board the ferries for every route in the system. The first wave of surveying was conducted in March 2008 and profiles winter riders who tend to be more regular, non-recreational travelers. The second wave of surveying conducted in late July and early August 2008 profiles summer riders who represent both regular and recreational riders. A total of 13,000 surveys were completed, representing a statistically valid sample of ferry customers.
3. **General Market Area and Infrequent Rider Survey –** The intent of this survey was to talk to people who no longer ride the ferries, or do so infrequently, to find out why they have stopped or decreased their use of the ferry system. More than 1,200 telephone contacts were completed using a random sample of residents living in Puget Sound counties served by WSF.
4. **Freight Customer Survey -** The purpose of this research was to gather freight customer insights regarding their travel on WSF. Decision makers at various freight companies were provided with the opportunity to share their opinions and ideas on such things as congestion pricing and the possibility of a reservation system for ferries. A total of 25 freight customers with varying sized fleets participated.

5. **In depth on-line Surveys -** A subset of those who took the on-board surveys were selected to participate in additional research which entailed two different detailed on-line surveys aimed at testing reactions and sensitivities to various strategies and fare levels:

   - Price Sensitivity Study: this on-line conjoint survey tested the possible effects that changes to fares and time of day pricing could have on ferry usage.
   - Mode Shift Study – this on-line survey tested the effects that changes to services and pricing would have on vehicle drivers' decision to walk on instead of drive onto the ferry – specifically what combination of incentives and disincentives influence mode choice decisions.

Details of this entire research effort can be found in the Executive Summary that follows. Further detail can be found in the various technical papers and back-up materials contained in the enclosed CD. We encourage you to review the findings of this groundbreaking effort. All of this material is also available on the WSTC web site at www.wstc.wa.gov. If you would like to obtain additional copies of this or the CD, please contact our offices at 360 705-7070.

Sincerely,

Dan O'Neal, Chairman
Washington State Transportation Commission

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Study Background and Methodology

Legislation enacted in 2007 directed the Washington State Transportation Commission (WSTC) to conduct a survey to gather data on ferry users to help inform level of service, operational, pricing, planning, and investment decisions. The legislation directed that the survey must include, but not be limited to the following: (a) recreational users; (b) walk-on customer use; (c) vehicle customer use; (d) freight and goods movement demand; and (e) reactions to potential operational strategies and pricing policies described under Section 7 of the law. Section 7 further described four key operational strategies that could require customer input: (a) the feasibility of using reservation systems; (b) methods of shifting vehicular traffic to other modes of transportation; (b) methods of improving on-dock operations to maximize efficiency and minimize operating and capital costs; (c) options for leveling peak vehicle demand; and (d) options for increasing off-peak ridership. This Executive Summary presents results from a comprehensive research program described below that provides data as input to support the development of operational strategies and other policies being considered by the Commission, the Legislature and the Department of Transportation that are working to address the complex problems Washington State Ferries (WSF) is facing today.

The 2008 Ferry Customer Survey is multi-phase in nature as outlined below.

1. ***Qualitative Research***: Focus groups were conducted representing frequent and infrequent riders on all WSF routes. The objectives of the focus groups and the subsequent research were to: (a) explore current travel behavior, (b) understand key customer characteristics and their influence on attitudes and travel behaviors, (c) understand customer attitudes toward travel and what the impact of these attitudes might have on attitudes toward potential pricing and operational strategies, (d) identify customers' requirements and expectations for service and their willingness to pay for or make trade-offs to better manage demand for vehicle travel during peak periods and to improve traffic flow, and (e) assess alternatives to measure the impacts of pricing and operational strategies.

2. ***Survey Research***: Three surveys were completed as follows:

   a. ***On-Board Surveys:*** Two waves of on-board surveys were conducted to provide a comprehensive and reliable profile of WSF riders and to test customer attitudes toward possible changes in fare policies and/or operations. A quantitative research methodology was developed to yield reliable and statistically valid baseline data to allow for analysis at the aggregate (all riders) level as well as within key segments (route, boarding mode, time of travel, and frequency of travel). More than 13,000 riders were surveyed during the two survey periods (March and July / August 2008).

   b. ***General Market Area Survey:*** Although the primary focus of the 2008 WSF Customer Survey is on current ferry users, the purpose of the General Market Area Survey is to provide a reliable estimate of current and past ridership among all residents of the counties immediately surrounding Puget Sound, i.e., residents with the greatest access to and hence greatest likelihood of riding the ferry. More than 1,200 area residents were surveyed by telephone – 333 who live in the communities on the west side of Puget Sound (Kitsap, Island, Clallam, and Jefferson Counties) and rely heavily on the ferries, and 57 who live on Vashon and San Juan Islands and are dependent on the ferries to get to the mainland. The balance lives on the east side of Puget Sound (King, Snohomish, Pierce, and Skagit Counties.)

   c. ***Freight Customer Survey***: The freight customer survey provides insight into the unique travel patterns of those companies who regularly move freight on the ferries. Twenty-five (25) individuals who regularly schedule their company's freight trips on WSF completed an on-line survey, which contained a mix of descriptive and more qualitative (open-ended) questions. The list of companies to contact was provided by WSF and represents its most regular freight customers.

3. ***Strategy / Pricing Conjoint Research***: Two surveys were completed to understand ferry customers' response to different pricing and operational strategies:

   a. ***Congestion Pricing / Price Sensitivity Study:*** This research provides data on the potential impact that an overall fare increase and/or changes in fare policies, specifically time of day pricing, might have on vehicle drivers' travel behavior. An online survey using Choice-Based Conjoint (CBC) was conducted to determine the impact of different fares and time of travel in advance of or after their most recent trip time on their choice of travel modes (vehicle versus walk-on) and travel time (peak versus off-peak). Six hundred eighty-eight (688) WSF riders who drive onto the ferries at least some of the time provided potential mode/time shift data about one or more of their trips.

   b. ***Mode Shift Sensitivity Study:*** The final phase of the research examines the impact a comprehensive travel package that includes improved transit connections on both ends of a customer's trip, terminal improvements, and access to options that could eliminate the need for a vehicle could have on customers' willingness to walk on the ferry instead of driving on. An online survey using Adaptive Choice-Based Conjoint (ACBC) was conducted. Five hundred thirty-four (534) WSF riders who drive on the ferries at least some of the time completed the conjoint exercise.

The Executive Summary is just that – an overall summary of the findings and implications of the results from the multi-phase research process. It presents results for all riders and, as appropriate, differences between summer and winter riders. In addition, results are presented for each route since this analysis is of particular interest to so many end users of this research. Significant findings are indicated in bold text in the graphs and tables.

In addition to this summary, details of all key findings of this research are presented in a series of eight (8) Technical Papers. Results in these Technical Papers are broken down by key subgroups that include: primary boarding mode, day and time of travel, demographics, frequency of travel, trip purpose, fare payment, etc. These Technical Papers are further supported by data tabulations. All materials are provided on the enclosed CD.

Key Findings

Characteristics of Washington State Ferries Riders / Nonriders

Over the years, WSF has conducted some research on its riders. That research has included two major survey efforts: Origin & Destination Surveys conducted in 1993, 1999, and 2006, and the 2002 Washington State Ferries Amenity and Customer Satisfaction Survey.

The legislation clearly identified three users of the system and a critical objective of the research is to provide a comprehensive profile of each of these user groups: (a) regular riders, (2) recreational users, and (3) freight users.

Demographic Characteristics of WSF Riders

Regular Riders

For the purposes of this research, regular riders are defined as those riders who completed the on-board surveys.

Gender: The distribution of Washington State Ferries customers is almost evenly split between men (48%) and women (52%).

- In the winter, the gender split is essentially identical. In the summer, somewhat more riders are women (53%) than men (47%).

Age: WSF customers are somewhat older than the general population in the communities served by WSF. Whereas the average (median) age of the ferry-served communities is 45, the average age of WSF riders is 51.

- Over half (51%) of all WSF riders are between the ages of 45 and 64 compared to 36 percent in the general population of the Puget Sound communities served by WSF.
- Most likely reflecting the increase in the number of recreational travelers, a greater percentage of summer riders are between the ages of 16 and 34 – 20% summer compared to 15% winter.

Employment: The majority (76%) of WSF riders are employed. There are no differences between seasons.

- Sixteen percent (16%) of WSF riders are retired. While this generally matches the population in the Puget Sound counties served by the ferries, it is lower than the percentage of retired persons living in the communities on the west side of Puget Sound (25%).

Income: WSF customers are relatively affluent. The median household income is $80,703 (self-reported) compared to $55,591 for Washingtonians in general and $58,159 for the ferry-served communities.

The demographics of WSF riders vary somewhat by route and generally reflect the characteristics of the communities each route serves as shown on the following table.

Table 1: WSF Rider Demographics by Route

	All Riders (n=13,130)	SEA/ BAIN (n=4,600)	SEA/ BRE (n=1,567)	EDM/ KIN (n=2,413)	MUK/ CLI (n= 1,789)	FAU/ VAS (n=503)	FAU/ SOU (n=547)	PTD/ TAH (n=147)	KEY/ PTT (n=432)	ANA/ SAN (n=923)	ANA/ SID (n=209)
Gender											
Male	48%	47%	49%	49%	49%	48%	52%	43%	48%	44%	45%
Female	52	53	51	51	51	52	48	57	52	56	55
Age											
16 – 17	1%	1%	1%	1%	1%	2%	<1%	<1%	1%	1%	<1%
18 – 24	6	6	**12**	5	5	4	4	5	5	6	11
25 – 34	11	10	**18**	12	9	7	**14**	3	7	**16**	13
35 – 44	17	18	19	14	15	19	15	15	12	17	19
45 – 54	25	26	23	24	23	30	26	30	25	23	26
55 – 64	26	27	**19**	26	**28**	27	27	32	26	23	16
65 Plus	14	13	**7**	**18**	**19**	11	13	15	**24**	14	15
Median	51.0	50.9	**44.4**	52.6	53.6	50.9	51.0	53.7	54.8	49.2	47.6
Employment											
Full-Time	61%	63%	**69%**	58%	56%	60%	**67%**	63%	48%	59%	54%
Part-Time / Student	15	15	14	14	17	18	12	15	16	16	18
Self-Employed	1	1	<1	1	1	2	1	<1	1	1	0
Retired	16	14	8	**20**	**21**	13	15	16	**27**	16	19
Other	7	7	8	7	6	7	5	5	8	7	9
Household Income											
< $15,000	4%	4%	**7%**	2%	3%	4%	2%	2%	5%	3%	10%
$15,000 - $35,000	10	6	**14**	10	9	12	10	11	11	11	5
$35,000 - $50,000	11	9	**13**	12	12	13	16	10	12	11	9
$50,000 - $75,000	21	18	23	24	26	20	25	25	22	17	14
$75,000 - $100,000	19	19	19	20	16	17	22	21	22	15	16
$100,000 - $150,000	20	**23**	17	20	20	21	16	21	17	18	23
$150,000 Plus	15	**21**	7	12	14	14	10	11	10	**25**	22
Median	$80,703	$92,585	$68,235	$77,582	$76,087	$77,350	$72,567	$78,394	$73,420	$88,053	$91,780

Source: Technical Paper #2 – WSF Customer Characteristics

Recreational

Recreational riders are different demographically from non-recreational riders as highlighted below.

- Recreational travelers are more likely to be women (57%) than men (43%). The overall distribution for non-recreational riders is evenly divided between men and women.
- A somewhat higher than average percentage (17%) of recreational riders are 65 and older. Consistent with that, a higher than average percentage is retired (22%).
- In addition, recreational riders are less likely to be employed full-time; however, nearly one out of five (18%) are employed part-time or are students.
- Finally, recreational travelers are more affluent than non-recreational riders.

There are no differences between winter and summer recreational travelers.

Table 2: Demographic Characteristics of Recreational Riders

	Non-Recreational Riders (n = 9,871)	Recreational Riders		
		Winter & Summer (n = 3,040)	Winter (n = 656)	Summer (n = 2,384)
Gender				
Male	**50%**	43%	42%	43%
Female	50%	**57%**	58%	57%
Age				
16 – 17	1%	1%	2%	1%
18 – 24	6%	6%	5%	6%
25 – 34	11%	12%	13%	12%
35 – 44	17%	17%	17%	16%
45 – 54	26%	24%	24%	24%
55 – 64	26%	24%	23%	24%
65 +	13%	**17%**	16%	17%
Median	51.0	51.0	50.3	51.2
Employment				
Full-Time	**64%**	52%	50%	52%
Part-Time / Student	1%	18%	22%	17%
Self-Employed	14%	1%	1%	<1%
Retired	14%	**22%**	20%	22%
Other	6%	8%	7%	9%
Household Income				
< $15,000	4%	4%	3%	4%
$15K - $35K	9%	9%	9%	9%
$35K - $50K	12%	11%	12%	10%
$50K - $75K	22%	19%	18%	20%
$75K - $100K	19%	17%	20%	16%
$100K - $150K	21%	19%	20%	19%
$150K Plus	14%	**21%**	17%	22%
Median	$79,805	$85,580	$83,746	$86,173

Source: Technical Paper #2 – WSF Customer Characteristics

Freight

A variety of companies completed the qualitative freight survey with fleet sizes ranging from as few as one to two trucks to more than 20 trucks. The freight companies surveyed report that they typically send between 55 and 60 percent of the trucks in their fleet onto the ferries monthly. The sizes of the trucks driven by these companies range from small commercial vehicles (basically the same size as a full-size pick-up truck or van) to very large tractor / trailer trucks (FHWA Class 10).

- Nearly three out of five (58%) respondents report driving trucks onto the ferries that are between 20 and 30 feet in length – the equivalent of most FHWA Class 5 Vehicles (two-axle, six-tire, single-unit trucks) and some Class 6 Vehicles (three-axle single-unit trucks).
- Many, however, also report scheduling much larger trucks onto the ferries:
  - Half (12 companies) report driving trucks between 30 and 60 feet in length. This includes FHWA Class 7 (four- or more axle single-unit trucks) through Class 9 (five-axle single-trailer trucks).
  - Seven out of the 25 companies (29%) surveyed report scheduling trucks onto the ferry that are in excess of 60 feet in length – the equivalent of FHWA Class 10 and above (six- or more axle single-trailer trucks or five- or more axle multi-trailer trucks).

The majority of freight companies in the survey (14 out of 24 or 58%) are in the retail or wholesale trade delivery business. However, other industries, including services and utilities and/or construction, also use the ferries.

Table 3: Business Line of Company

	Number of Respondents	% of Respondents
Retail or Wholesale Trade Delivery	14	58%
Utilities or Construction	4	17%
All Services	4	17%
For Hire Trucking	1	4%
Mail or Parcel Pickup and Delivery	1	4%

Question: Which of the following categories best describes the business line your company is in?
Base: All Freight Customers (n=24)
Source: Technical Paper #8 – Freight Customer Survey

Frequency of Riding

Puget Sound Area Residents' Ridership on Washington State Ferries

Washington State Ferries is clearly a resource that serves all communities immediately surrounding the Puget Sound as well as those who use the ferries on a regular basis. The General Market Area & Infrequent Rider Survey of residents in the Puget Sound counties that are served by WSF shows that 91 percent of all residents have ridden WSF at some point in the past.

- Over half (53%) of residents in the Puget Sound communities that are served by WSF have ridden WSF in the past but not within the three months prior to when the survey was conducted (June 2008). For the purpose of this report these residents are designated and referred to as "infrequent riders."
- Nine percent (9%) of Puget Sound residents do not ride the ferries; 38 percent are occasional or regular riders in that they have ridden the ferry in the past three months.

Some routes are used more heavily by infrequent riders living in the ferry-served communities than others as evidenced by comparing the last route infrequent riders took with actual WSF ridership figures.

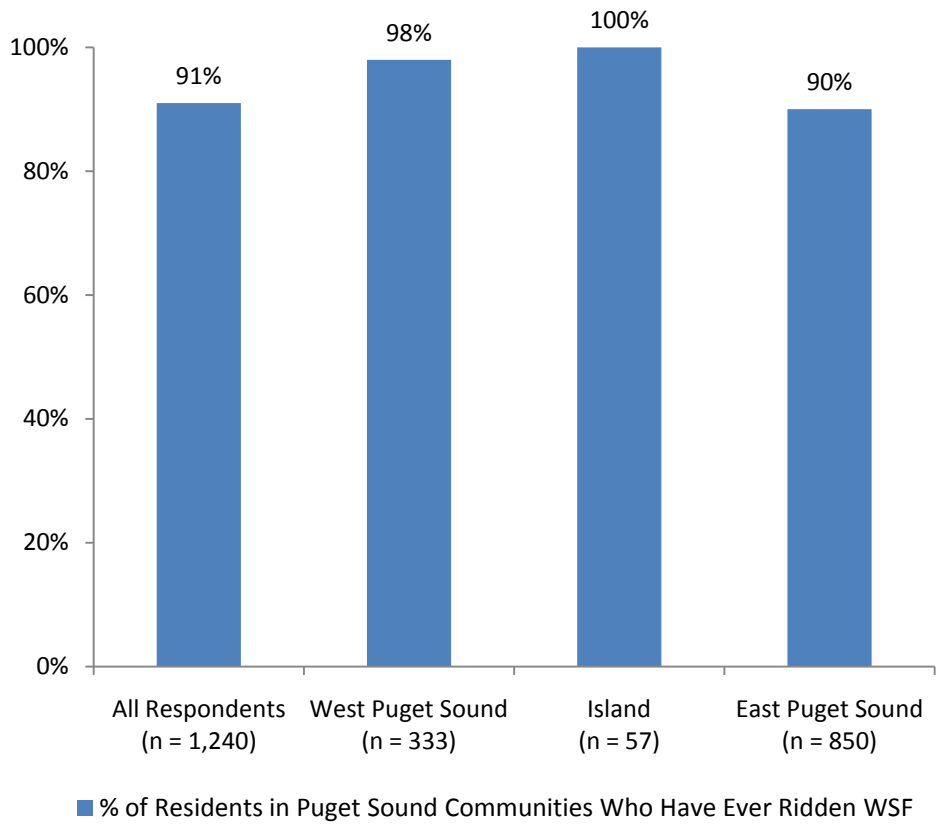
- This suggests that infrequent riders tend to ride Seattle / Bremerton, Edmonds / Kingston, and Anacortes / San Juans routes more heavily than regular riders.

Table 4: Most Recent Route Used

	Last Route Taken by Infrequent Riders *	% of Ridership (WSF Ridership Figures)
SEA / BAI	13%	27%
SEA / BRE	**21%**	11%
EDM / KIN	**21%**	17%
MUK / CLI	12%	16%
FAU / VAS / SOU	10%	13%
PTD / TAH	2%	3%
PTT / KEY	4%	3%
ANA / SAN	**16%**	10%
ANA / SID	2%	2%

Source: Technical Paper #7 – General Market Area & Infrequent Rider Survey

Figure 1: Past Ridership on a Washington State Ferry



Question: Have you ever ridden a Washington State Ferry?
West of Puget Sound: All of Kitsap and Island and portions of Clallam and Jefferson Counties
Island: Vashon and San Juan Islands
East of Puget Sound: King (excluding Vashon Island), Pierce, Snohomish, and Skagit
Source: Technical Paper #7 – General Market Area & Infrequent Rider Survey

Frequency of Riding WSF

WSF serves a diverse set of riders on a regular basis – ranging from first time riders to those who ride nearly every day of the week and month.

- More than half (52%) of all infrequent riders (those who have ridden WSF in the past but not in the three months prior to June 2008) ride less often than once per year. Another 24 percent of infrequent riders ride at least once a year.•

Among regular riders (those surveyed on-board the ferries), the largest segment of WSF riders are "occasional riders" – those taking less than seven one-way rides per month.

- On average, WSF riders take 17 one-way trips per month.

It is not a surprise that the mix of regular versus occasional riders changes dramatically between the winter and summer periods.

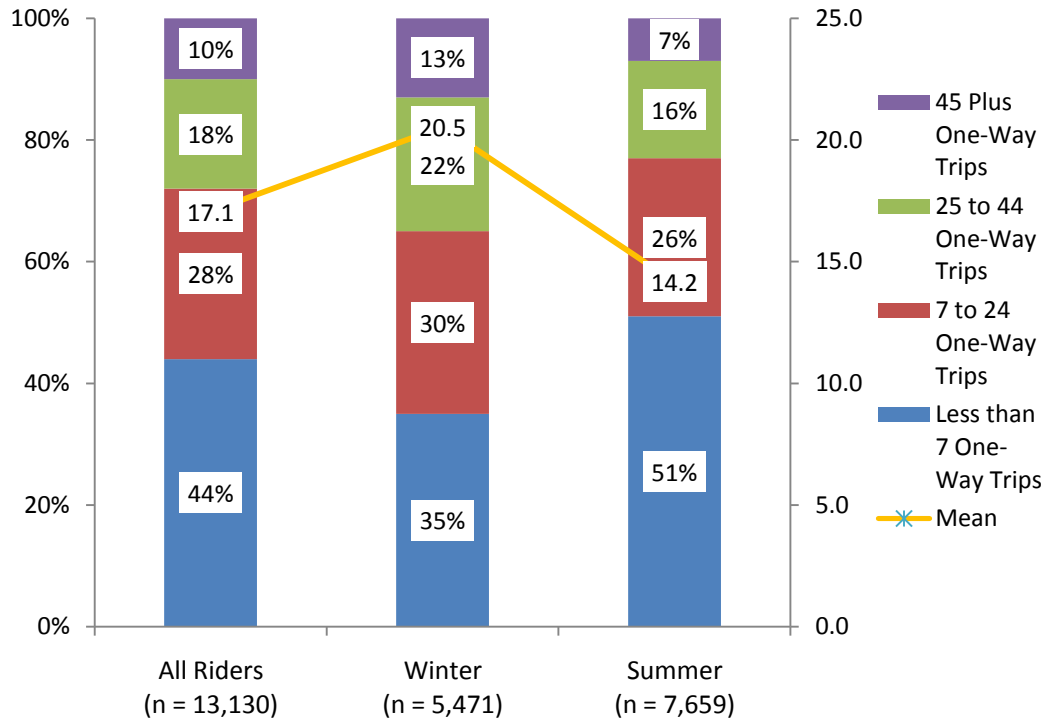
- In the summer, occasional riders (those taking less than seven one-way rides per month) dominate the system.

There is little change in the average number of trips per month each segment takes between winter and summer.

Table 5: Average Number of Trips Per Month by Rider Segment by Season

Rider Segment Based on Number of One-Way Trips / Month	Winter	Summer
Less than 7	2.7	2.3
7 to 24	13.7	14.4
25 to 44	38.0	36.0
45 Plus	54.0	53.3

Figure 2: Total Number of One-Way Trips / Month



Source: Technical Paper #2 – WSF Rider Characteristics

• *Source: Technical Paper #7 – General Market Area & Infrequent Rider Survey*

Frequency of riding varies significantly by route and is related to the types of trips taken by riders on these routes.

- Clearly those routes that carry a higher percentage of commuters also have the most frequent riders. These routes include: Seattle / Bainbridge (36% commuters), Seattle / Bremerton (46% commuters), Fauntleroy / Vashon (38% commuters), Fauntleroy / Southworth (42% commuters), and Point Defiance / Tahlequah (48% commuters).
- On the other hand, those routes that carry a higher percentage of recreational travelers have a greater percentage of infrequent riders. These routes include: Keystone / Port Townsend (44% recreation), Anacortes / San Juans (54% recreation), and Anacortes / Sidney (84% recreation [summer only]).

Table 6: Frequency of Riding by Route

	All Riders (n=13,130)	SEA/ BAIN (n=4,600)	SEA/ BRE (n=1,567)	EDM/ KIN (n=2,413)	MUK/ CLI (n=1,789)	FAU/ VAS (n=503)	FAU/ SOU (n=547)	PTD/ TAH (n=147)	KEY/ PTT (n=432)	ANA/ SAN (n=923)	ANA/ SID (n=209)
< 7 Trips / Month	44%	38%	39%	52%	39%	24%	37%	25%	**74%**	**84%**	**96%**
Winter	35%	33%	34%	43%	28%	14%	28%	16%	63%	77%	n.a.
Summer	51%	43%	43%	61%	50%	33%	43%	32%	83%	88%	96%
7 to 24 One-Way Trips	28%	28%	23%	27%	**37%**	33%	31%	26%	17%	14%	3%
Winter	30%	26%	21%	31%	42%	29%	36%	28%	21%	19%	n.a.
Summer	26%	30%	25%	23%	32%	36%	27%	24%	14%	10%	3%
25 to 44 One-Way Trips	18%	**21%**	**26%**	15%	15%	**24%**	**24%**	**34%**	5%	2%	1%
Winter	22%	**25%**	**31%**	18%	17%	**29%**	**26%**	**34%**	9%	3%	n.a.
Summer	16%	**18%**	**23%**	13%	13%	**20%**	**22%**	**34%**	1%	2%	1%
45 Plus One-Way Trips	10%	12%	11%	6%	9%	**19%**	8%	15%	4%	<1%	0%
Winter	13%	**16%**	14%	7%	13%	**28%**	10%	22%	6%	<1%	n.a.
Summer	7%	9%	9%	4%	6%	12%	7%	10%	2%	<1%	0%
Mean	17.1	**19.6**	**21.3**	13.4	16.3	**24.6**	**19.1**	**24.0**	7.6	4.1	1.9
Winter	20.5	**22.8**	**23.9**	15.9	**19.7**	**30.8**	**21.6**	**28.8**	11.3	5.3	n.a.
Summer	14.2	**16.8**	**19.1**	11.1	13.1	**19.2**	**17.3**	**20.1**	4.7	3.4	1.9

Source: Technical Paper #2 – WSF Rider Characteristics

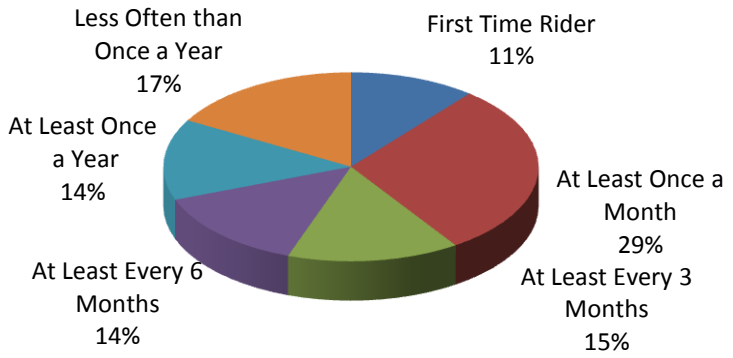
Recreational

Nearly half (49%) of all infrequent riders living in the Puget Sound communities served by WSF surveyed in the General Market & Infrequent Rider Survey report that their last trip was primarily for recreational purposes.•

Summer recreational riders (from the on-board surveys) represent a mix ranging from first time riders (11%) to relatively infrequent riders riding less than once a year (17%) to relatively regular riders riding at least once a month (29%).

Thirty-five percent (35%) of those riding at least once a month for recreational purposes take between 1 and 6 one-way trips per month; an additional 35 percent takes between 7 and 24 one-way trips per month.

Figure 3: Frequency of Riding – Recreational Riders



Question: On average, how often do you ride Washington State Ferries for recreational purposes?
Base: Summer Recreational Riders (n = 2,384)
Source: Source: Technical Paper #2 – WSF Rider Characteristics

Freight

On average, the freight companies surveyed report that their trucks take 40 one-way trips per month – or 20 round trips. This equates to approximately one round trip daily per company per work day.

Table 7: Number of One-Way Crossings by All Trucks in Fleet

	Number of Respondents	% of Respondents
Less than 15	4	17%
15 to 20	3	13%
21 to 30	5	21%
31 to 40	4	17%
41 or More	8	34%
Mean # of Monthly Trips		39.6

Question: In a typical month, how many one-way crossings do all the trucks in your fleet make?
Base: All Freight Customers (n=24)
Source: Source: Technical Paper #8 – Freight Customer Survey

• Source: Technical Report #7: General Market Area & Infrequent Rider Survey

Trip Purpose

Regular Riders

Consistent with the findings regarding frequency of travel, riders' reported trip purpose clearly demonstrates that WSF serves a diverse group of riders.

Three out of ten (30%) WSF riders say the primary purpose of their trip is to commute to work or school.

- While the percentage of trips that are commute trips decreases significantly in the summer – from 36 percent in winter to 25 percent in summer – the actual number of commute trips season to season is nearly the same – 142,357 weekly trips in winter and 141,490 in the summer.

The balance (70%) of all trips consists of non-commute trips.

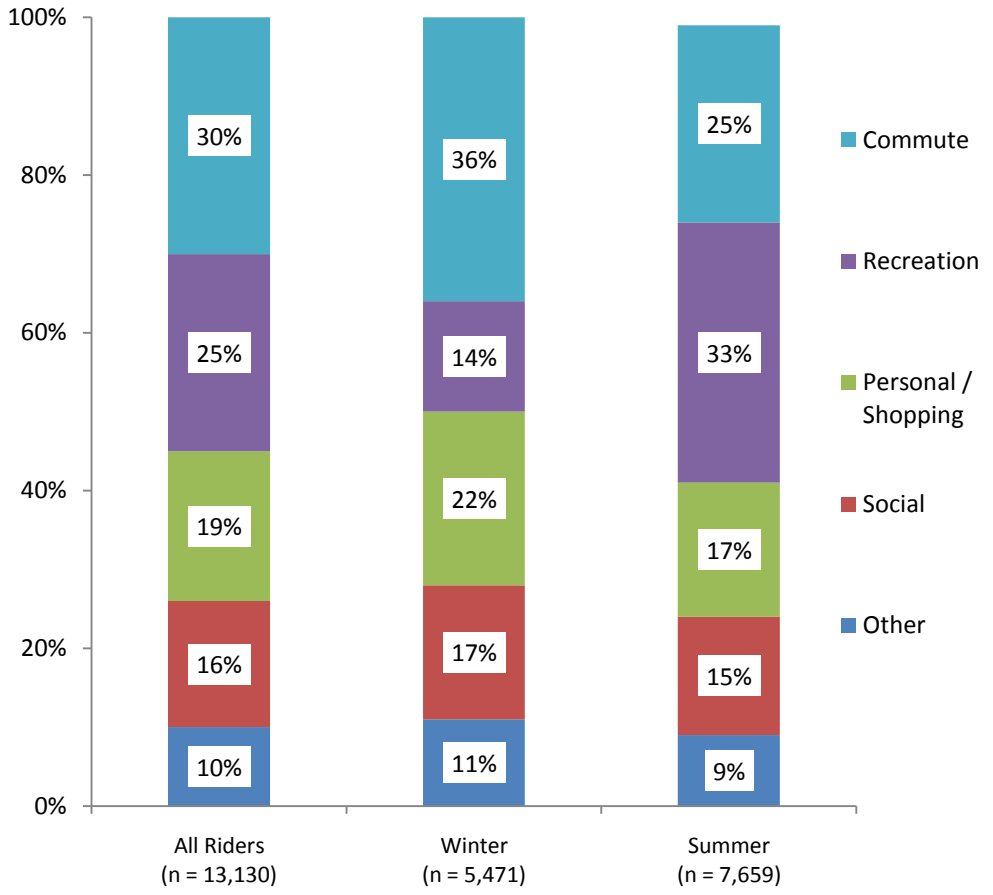
- One out of four (25%) trips are for recreation. This includes travel for recreation / tourism (20%) and to special events (5%). The percentage of recreation trips increases significantly during the summer months.
  - Ridership on WSF increases by 37 percent in the summer. The number of recreation trips increases by 221 percent. The number of trips for all other non-commute purposes also increases, but by a significantly smaller amount.

Table 8: Number of Weekly Trips by Trip Purpose

	Winter	Summer	% Change
Commute	142,357	141,490	-1%
Recreation	57,519	184,376	221%
Personal / Shopping	87,484	95,220	9%
Social	70,026	83,879	20%
Other	42,987	51,402	20%
Total Weekly Trips*	411,377	564,099	37%

Total weekly trips sum to more than the individual categories, due to missing responses in the specific trip purpose question.
Source: Technical Paper #2 – WSF Rider Characteristics

Figure 4: Trip Purpose



Question: What is the primary purpose of this specific trip - that is the trip you are taking today?
Source: Technical Paper #2 – WSF Rider Characteristics

As noted in the discussion on frequency of riding, primary trip purpose varies by route.

- Seattle / Bainbridge, Seattle / Bremerton, Fauntleroy / Vashon, Fauntleroy / Southworth, and Point Defiance / Tahlequah all carry a higher than average percentage of commuters.
- Three routes carry the highest percentage of recreational riders – Keystone / Port Townsend, Anacortes / San Juans, and Anacortes / Sidney.
- Edmonds / Kingston and Mukilteo / Clinton serve a more diverse customer base. Both routes carry a lower than average percentage of commuters. An above-average percentage of Edmonds / Kingston riders are traveling to visit friends or family while a higher than average percentage of Mukilteo / Clinton riders are traveling for personal reasons (e.g., medical appointments) and shopping.

Table 9: Primary Trip Purpose by Route

	All Riders (n=13,130)	SEA/ BAIN (n=4,600)	SEA/ BRE (n=1,567)	EDM/ KIN (n=2,413)	MUK/ CLI (n=1,789)	FAU/ VAS (n=503)	FAU/ SOU (n=547)	PTD/ TAH (n=147)	KEY/ PTT (n=432)	ANA/ SAN (n=923)	ANA/ SID (n=209)
Commute	30%	**36%**	**46%**	23%	24%	**38%**	**42%**	**48%**	7%	3%	**0%**
Winter	36%	41%	50%	29%	27%	49%	43%	50%	14%	4%	n.a.
Summer	25%	31%	43%	19%	22%	29%	42%	47%	2%	2%	**0%**
Recreation	25%	24%	17%	24%	21%	19%	15%	16%	**44%**	**54%**	**84%**
Winter	14%	16%	12%	13%	10%	10%	8%	11%	22%	34%	n.a.
Summer	33%	30%	21%	32%	29%	26%	20%	19%	57%	63%	84%
Personal / Shopping	19%	19%	16%	18%	**25%**	22%	14%	17%	12%	18%	5%
Winter	22%	21%	16%	18%	30%	22%	15%	21%	15%	31%	n.a.
Summer	17%	18%	15%	19%	21%	21%	13%	13%	10%	12%	5%
Social	16%	12%	10%	**24%**	19%	9%	19%	10%	26%	19%	10%
Winter	17%	12%	11%	29%	23%	6%	20%	9%	27%	21%	n.a.
Summer	15%	13%	10%	20%	16%	10%	18%	11%	25%	17%	10%
Other	10%	9%	11%	11%	11%	13%	9%	9%	12%	6%	1%
Winter	11%	10%	10%	11%	10%	12%	13%	9%	21%	9%	n.a.
Summer	9%	8%	11%	10%	11%	14%	7%	9%	6%	5%	1%

Source: Technical Paper #2 – WSF Rider Characteristics

Recreational

Between Anacortes and the San Juans, during a typical week, there is a 109 percent overall increase in traffic between winter and summer, with 90 percentage points of that increase resulting from the growth in recreational ridership.

Similarly between Keystone and Port Townsend, during a typical week, there is a 59 percent overall increase in traffic between winter and summer, with 114 percentage points of that increase resulting from the growth in recreational travel. It is noteworthy that there is a decrease in other types of travel on this route during the summer; thus the decrease in other trip taking is more than made up the growth in recreation trips.•

Table 10: Extent of Recreational Travel by Route

	Winter										
	All Riders (n=5,471)	SEA/ BAIN (n=2060)	SEA/ BRE (n=758)	EDM/ KIN (n=996)	MUK/ CLI (n=646)	FAU/ VAS (n=251)	FAU/ SOU (n=268)	PTD/ TAH (n=93)	KEY/ PTT (n=128)	ANA/ SAN (n=271)	ANA/ SID
% of All Trips that are Recreation Trips	14%	16%	12%	13%	10%	10%	8%	11%	**22%**	**34%**	n.a.
# of Weekly Trips	57,519	18,018	5,395	9,976	7,113	3,670	1,219	1,231	2,094	8,804	n.a.
	Summer										
	All Riders (n=7,659)	SEA/ BAIN (n=2,540)	SEA/ BRE (n=809)	EDM/ KIN (n=1,417)	MUK/ CLI (n=1,143)	FAU/ VAS (n=252)	FAU/ SOU (n=279)	PTD/ TAH (n=54)	KEY/ PTT (n=304)	ANA/ SAN (n=652)	ANA/ SID (n=209)
% of All Trips that are Recreation Trips	33%	30%	21%	32%	29%	26%	20%	19%	**57%**	**63%**	**84%**
# of Weekly Trips	184,376	44,319	13,156	31,070	26,539	11,677	4,441	2,727	8,612	34,123	7,711
% Increase Summer	221%	146%	144%	211%	273%	218%	264%	122%	311%	288%	n.a.

• Note that winter data collection on the Port Townsend / Keystone route occurred after the retirement of the Steel Electrics. Boats operating during the winter data collection period had limited vehicle capacity.

Boarding Mode

Regular Riders

Statements made in the qualitative (focus group) research suggested that many riders drive onto the ferry only when they have to. This then raised the question of how often people drive on the ferries versus walking on. Respondents on the on-board survey were asked the total number of trips they take each month and the number of trips they take by each mode. Based on these responses it was possible to obtain a reliable measure of how often riders drive their vehicle onto the ferry.

Two out of five (41%) WSF riders drive onto the ferry (as a driver or as a passenger in a vehicle) 100 percent of the time.

- There are no significant differences in the percentage of "100% Drivers" between winter and summer travelers.

An additional 14 percent of WSF riders drive on more often than they walk on.

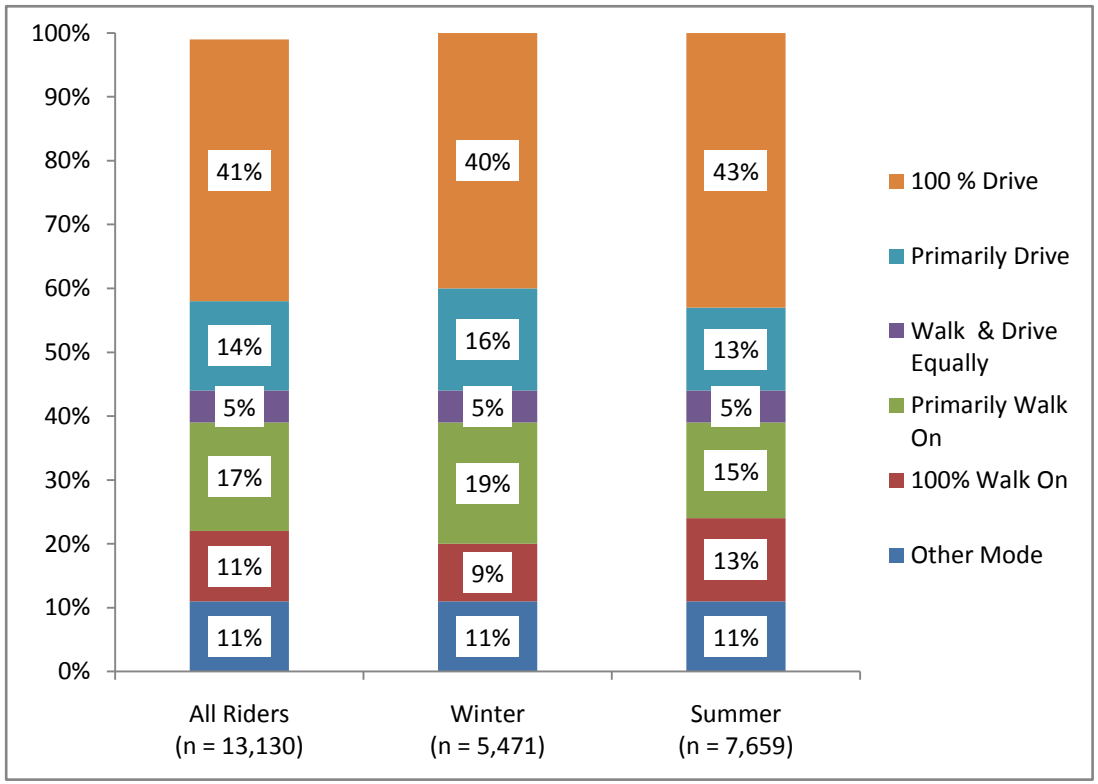
- A somewhat higher proportion of winter riders drive on more than they walk in the winter than in the summer months. This may reflect the influence winter weather has on mode choice.

Eleven percent (11%) of all WSF riders walk or bike onto the ferry 100 percent of the time. An additional 17 percent walks / bikes on more often than they drive on.

- A greater percentage of summer than winter riders report that they walk or bike on 100 percent of the time – 13 percent compared with 9 percent, respectively. Conversely, more winter than summer riders report that they walk / bike on most of the time – 19 percent compared with 15 percent, respectively. As with the seasonal differences noted for drivers, the seasonal differences among these riders most likely reflect the weather.

A relatively small segment (5%) reports that they drive and walk on an equal amount. Finally, 11 percent of all WSF passengers primarily access the ferry through some other mode – this includes motorcycles, scooters, registered carpools, or vanpools.

Figure 5: Frequency of Boarding for All Trips



Computed variable based on the number of trips respondents report taking by each mode divided by the total number of trips they report taking each month.

Source: Technical Paper #2 – WSF Rider Characteristics

There are clear differences in the extent to which riders choose to drive onto the ferry versus walk on. Factors that appear to influence the frequency with which riders choose to drive on may include their destination, the purpose of their trip, the frequency with which they ride, the ability to get to their final destination on foot or through some alternative mode other than driving, and their need for a vehicle when they arrive.

- Seattle / Bremerton and, to a lesser extent, Seattle / Bainbridge riders are the most likely to walk on all or most of the time. An above-average percentage of riders on these routes are commuters and many of them work in downtown Seattle, making it easy for them to walk onto the ferry.
- On the other hand, a significant percentage of riders on the three other commuter routes – the South Sound routes – drive onto the ferry most or all of the time. This would suggest that lack of convenient public transportation may be a factor in this decision.
- The majority of Edmonds / Kingston and Mukilteo / Clinton riders also drive onto the ferry all or most of the time. As riders on these routes ride the ferries less often, the cost of driving may not be as great a factor. In addition, riders on these routes may be going to a wider array of destinations forcing them to need a car to get to their final destination.
- Finally, the majority of riders on the two primarily recreational routes – Keystone / Port Townsend and Anacortes / San Juans – drive onto the ferry. Many also suggest using some other mode, which could include use of recreational vehicles. These riders may choose to drive on as they need a car at their destination and/or they are carrying luggage and gear.

Table 11: Frequency of Boarding Mode for All Trips by Route

	All Riders (n=13,130)	SEA/ BAIN (n=4,600)	SEA/ BRE (n=1,567)	EDM/ KIN (n=2,413)	MUK/ CLI (n=1,789)	FAU/ VAS (n=503)	FAU/ SOU (n=547)	PTD/ TAH (n=147)	KEY/ PTT (n=432)	ANA/ SAN (n=923)
100% Drive On	41%	27%	28%	**52%**	**56%**	41%	49%	47%	**54%**	**48%**
Primarily Drive On	14%	15%	8%	12%	17%	**26%**	13%	12%	12%	8%
Walk / Drive Equally	5%	6%	6%	6%	4%	2%	6%	1%	5%	5%
Primarily Walk On	17%	**29%**	**22%**	9%	10%	17%	15%	27%	6%	4%
100% Walk On	11%	13%	**29%**	9%	4%	7%	8%	1%	6%	8%
Other	11%	10%	8%	11%	9%	7%	9%	11%	**18%**	**26%**

Computed variable based on the number of trips respondents report taking by each mode divided by the total number of trips they report taking each month.
Source: Technical Paper #2 – WSF Rider Characteristics

Recreational

More than two-thirds (69%) of recreational travelers drive onto the ferry as a driver or a passenger in a vehicle.

- Reflecting the mix of vehicle drivers and passengers, average vehicle occupancy among those traveling for recreation is higher than for those traveling for non-recreational purposes – 2.5 pp / vehicle compared to 1.6 pp / vehicle, respectively.

As would be expected given the nature of trip, recreational riders are less likely than non-recreational travelers to walk onto the ferry – 31 percent compared with 38 percent, respectively. This most likely reflects the need for luggage and other gear / supplies, the potentially extended nature of the trip, and the perceived or real need for a car at the destination to get around.

Significantly more winter than summer recreational riders are vehicle drivers (43%).

In the summer period the distribution between vehicle drivers and passengers is more even – 32 percent and 36 percent, respectively.

Table 12: Boarding Mode for Recreation Trips

	Non-Recreational Riders (n = 9,871)	Recreational Riders		
		All (n =3,040)	Winter (n = 656)	Summer (n = 2,384)
Vehicle Driver	**44%**	35%	**43%**	32%
Vehicle Passenger	18%	34%	29%	**36%**
Walk-On Passenger	38%	31%	28%	32%
Average Vehicle Occupancy	1.6	2.5	2.3	2.5

Source: Technical Paper #2 – WSF Rider Characteristics

Fare Payment

Riders are almost equally likely to pay the price of a single-ride (full fare) or a discounted fare – 47 percent compared to 50 percent, respectively.

- Of those paying a discounted fare, two-thirds (66%) use a multi-ride commuter card, 22 percent use a monthly pass, and 12 percent use another discounted (youth, senior, or disabled) fare.

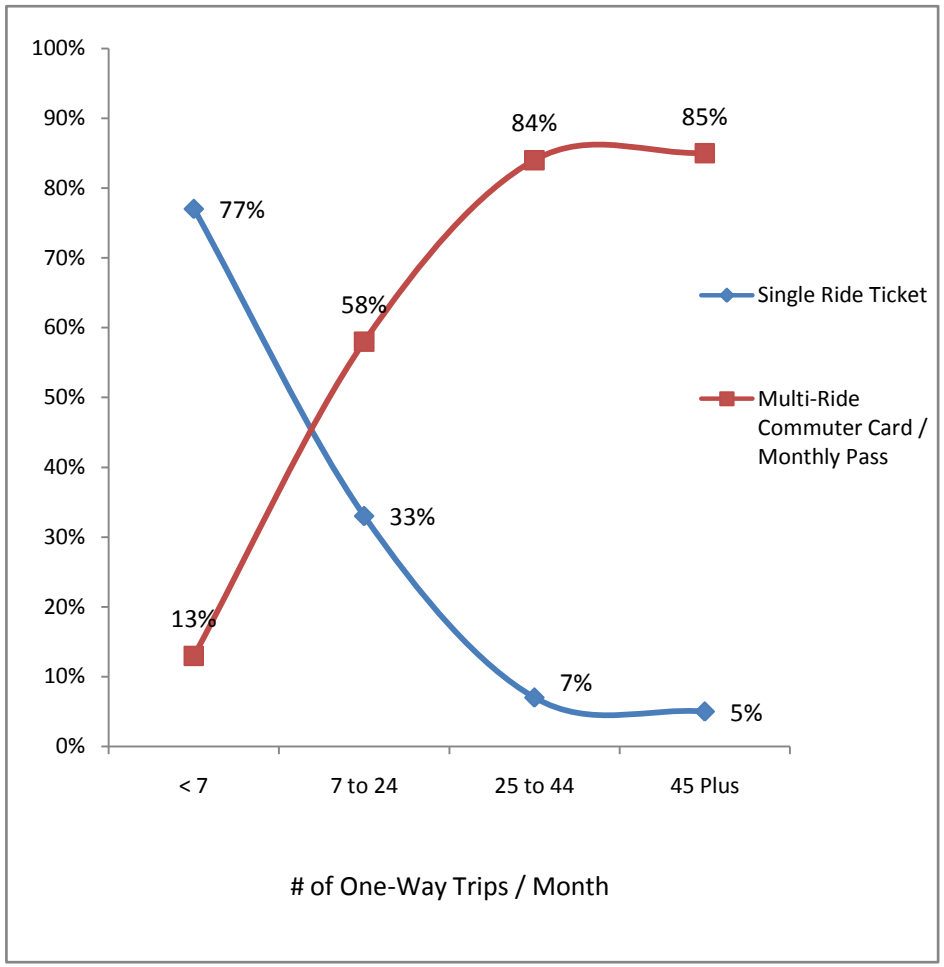
Fare payment method is clearly related to the number of trips a rider takes each month.

- More than three out of four (77%) riders who take less than seven one-way trips per month pay with a single ride ticket. This drops to 33 percent among those taking 7 to 24 one-way trips monthly and to 7 percent or less for those taking more than 25 monthly trips.

- On the other hand, only 13 percent of those who take six or fewer one-way trips per month use a commuter card or monthly pass. This increases to 58 percent for those taking 7 to 24 trips and to 84 percent or more for those taking more than 24 trips.

- The point at which more riders use pre-paid fare media than a single ride ticket is between 18 and 19 one-way trips per month.

Figure 6: Fare Payment Method by Frequency of Riding



Question (Winter): How did you pay your fare for your trip today?
Question (Summer): How do you typically pay your fare?
Source: Technical Paper #4 – Attitudes Surrounding Fares

Attitudes toward Proposed Operational Strategies

Vehicle Reservations

Questions were included to measure rider attitudes toward proposed vehicle reservation policies and their willingness to pay a premium for a guaranteed space on the ferry for a specific sailing time. Some questions were asked in both survey waves. New questions were added in the summer to test ideas that arose during subsequent discussions.

Riders clearly have opinions about how a reservation system should be structured. They agree that . . .

- The system should be dynamic and be able to inform people on how much capacity is reserved, how much is available for reservation, and how much is open for first come, first serve.
- There should be a policy that penalizes those that do not arrive on time – specifically that their space would be released for general boarding and they would forfeit their reserved space and payment.
- The system should offer a feature that would allow frequent users to be able to book a full week's travel with a single visit.

On the other hand, they have mixed opinions as to whether . . .

- The system should be used only on those routes with high recreation / tourist traffic.
- The amount of space that is set aside for reservations should be limited.
- Those using the reservation system should pay a premium fare.
- Regular riders should be given a priority.

Attitudes vary by route. Riders on the three primarily recreational routes have more strongly held opinions than do those on the other routes. In addition, there are some significant differences in Port Townsend / Keystone riders' attitudes toward a reservation system between the winter and summer survey periods that reflect the introduction of a reservation system on that route. Details on these differences are provided in the full report.

Table 13: Attitudes toward Proposed Reservation System by Route

	All Riders (n=13,130)	SEA/ BAIN (n=4,600)	SEA/ BRE (n=1,567)	EDM/ KIN (n=2,413)	MUK/ CLI (n=1,789)	FAU/ VAS (n=503)	FAU/ SOU (n=547)	PTD/ TAH (n=147)	KEY/ PTT (n=432)	ANA/ SAN (n=923)	ANA/ SID (n=209)
	The reservation system would inform people on how much capacity is reserved, how much is available for reservation, and how much is open for first come, first serve (summer only)										
Net Agree	70%	69%	66%	70%	65%	68%	70%	71%	76%	85%	88%
Net Disagree	17%	17%	20%	17%	20%	18%	17%	18%	13%	10%	6%
	If a reservation customer does not arrive on time, their space would be released for general boarding and they would forfeit their reserved space and payment (both waves)										
Net Agree	66%	65%	61%	68%	67%	62%	62%	69%	64%	72%	71%
Net Disagree	20%	20%	23%	19%	19%	22%	21%	18%	19%	15%	21%
	Frequent users would be able to conveniently reserve a full week's travel with one visit to the reservation system (summer only)										
Net Agree	56%	54%	54%	58%	55%	45%	59%	51%	**66%**	**68%**	**75%**
Net Disagree	26%	28%	27%	24%	25%	32%	26%	27%	21%	17%	7%
	Some space should be available for reservation a month ahead of travel and some space would only be available one day ahead of travel (summer only)										
Net Agree	47%	47%	42%	47%	44%	40%	47%	36%	45%	**64%**	**64%**
Net Disagree	28%	29%	32%	29%	28%	33%	29%	33%	26%	16%	14%
	Regular riders with a monthly pass should be given priority (winter only)										
Net Agree	46%	41%	45%	47%	53%	49%	46%	47%	46%	51%	n.a.
Net Disagree	32%	38%	30%	32%	26%	35%	36%	33%	27%	25%	n.a.
	Customers with a vehicle reservation would pay a premium over the regular vehicle ticket price (both waves)										
Net Agree	46%	50%	42%	46%	46%	49%	47%	42%	30%	46%	22%
Net Disagree	37%	32%	37%	37%	36%	36%	34%	39%	**52%**	39%	**59%**
	A specific but limited amount of reserved space for vehicles should be set aside for advance reservations (both waves)										
Net Agree	47%	46%	43%	48%	45%	34%	43%	39%	**58%**	**65%**	**70%**
Net Disagree	35%	36%	35%	34%	36%	49%	40%	44%	25%	18%	12%
	Only routes and/or sailings with high recreational / tourist travel should have a vehicle reservation system (both waves)										
Net Agree	40%	41%	36%	38%	43%	48%	39%	45%	35%	38%	36%
Net Disagree	33%	33%	35%	35%	31%	30%	34%	28%	38%	35%	38%

Source: Technical Paper #5 – Attitudes toward Proposed Operational Strategies

Fare Collection Strategies to Efficiently Move Vehicles

Another area of study was to identify strategies that are customer-centric and that can more effectively move vehicle traffic. Respondents were asked to indicate the extent to which they agreed or disagreed with seven proposed operational strategies regarding to how fares are collected that could potentially improve the flow of people and vehicles onto the ferry. Because the study group that was looking at these operational strategies was working during and immediately after the winter data collection period, these questions were asked only in the March on-board surveys.

WSF winter riders show strong support for four of the proposed strategies:

- Offering a discount to vehicle drivers who purchase round trip tickets.
- Offering a stored value card.
- Changing ticket booth layout so two vehicles can pay simultaneously.
- Using in-vehicle transponders.

Opinions were almost equally divided regarding the use of on-board ticketing. In addition, one-third has no opinion. This could suggest that they do not completely understand how such a system would work.

In general, passengers do not support the idea of requiring pre-payment of fares for vehicle drivers. Moreover, they do not support the idea of limiting payment options for vehicles to pay cash or use pre-paid media, in essence eliminating credit card payments.

Attitudes vary somewhat by route and reflect the nature of travel on that route.

Table 14: Attitudes toward Fare Collection Strategies to Efficiently Move Vehicles by Route

	Winter Riders (n=5,471)	SEA/ BAIN (n=2,060)	SEA/ BRE (n=758)	EDM/ KIN (n=996)	MUK/ CLI (n=646)	FAU/ VAS (n=251)	FAU/ SOU (n=268)	PTD/ TAH (n=93)	KEY/ PTT (n=128)	ANA/ SAN (n=271)
Offer a discount to drive-on passengers if they purchase round trip tickets										
Net Agree	77%	75%	73%	80%	79%	74%	79%	72%	70%	70%
Net Disagree	9%	10%	12%	9%	9%	6%	8%	6%	13%	10%
Offer a stored value card										
Net Agree	69%	**74%**	70%	67%	66%	69%	71%	67%	53%	63%
Net Disagree	10%	8%	9%	8%	13%	14%	6%	16%	**19%**	14%
Change the layout of ticket booths so two vehicles can pay simultaneously										
Net Agree	63%	**66%**	63%	61%	55%	**78%**	63%	**71%**	52%	64%
Net Disagree	9%	8%	9%	10%	10%	7%	7%	12%	**15%**	5%
Use in-vehicle transponders to collect fares										
Net Agree	61%	**67%**	59%	59%	62%	67%	66%	59%	35%	47%
Net Disagree	17%	13%	17%	19%	17%	18%	14%	16%	**31%**	**26%**
Offer on-board ticketing for those who do not pre-pay fares										
Net Agree	38%	35%	30%	35%	38%	**62%**	39%	**47%**	35%	41%
Net Disagree	35%	38%	**40%**	37%	36%	24%	25%	29%	32%	31%
Limit forms of payments for vehicle passengers purchasing tickets at toll booths										
Net Agree	24%	22%	18%	**30%**	**29%**	19%	22%	22%	19%	9%
Net Disagree	56%	57%	59%	51%	53%	58%	48%	59%	58%	**71%**
Eliminate ticket purchases at toll booths for vehicle drivers										
Net Agree	11%	10%	11%	13%	10%	**18%**	12%	12%	7%	12%
Net Disagree	75%	78%	74%	74%	75%	75%	71%	77%	77%	76%

Source: Technical Paper #5 – Attitudes toward Proposed Operational Strategies

Strategies to Improve Walk-On Passenger Experience

Improvements to the walk-on passenger experience could increase drivers' willingness to walk onto the ferry at least sometimes.

In general, winter riders support all of the suggested improvements / enhancements to passenger access.

- With the exception of secure and covered parking with covered walkways to the terminals and offering a bike sharing program, all improvements are supported by the majority (50 percent or more) of the respondents.

Two proposals receive the **highest levels of overall support**:

- Providing fare discounts or other incentives to walk-on and bicycle passengers, and
- Providing dedicated lanes to safely drop passengers off at the terminals.

It is important to note that walk-on and bicycle passengers already pay a significantly lower fare than do vehicle drivers. Vehicle passengers pay the same fare as walk-on passengers. As such, riders are suggesting that further discounts should be provided.

Five additional proposals receive above-average levels of support with slightly less than three out of five winter riders agreeing that WSF should implement these strategies. These include:

- Improving sidewalk and bicycle connections to the terminals. Improved bicycle connections were described as bike lanes, paths, and/or wide shoulders.
- Providing sheltered and secure bike parking at the terminals.
- Providing covered and separated pedestrian walkways that connect directly to the vehicle passenger deck.
- Offer a car sharing program on the destination side.

In general, these strategies appeal more strongly to current walk-on passengers.

- There is little evidence that improvements to the walk-on passenger experience in the form of improved access would encourage vehicle drivers to walk instead of drive onto the ferry. The Mode Shift Sensitivity Study, discussed on page 33, provides further evidence that other factors are significantly more important in vehicle drivers' mode choice decision than the comfort or ease of the walk-on passenger experience.

There are some differences by route. In many cases, these differences reflect the extent of walk-on traffic on that route. That is, the greater the number of walk-on passengers, the greater the support for the proposal. It is, however, very important to note the high degree of support among Anacortes / San Juans riders for a car sharing program.

Table 15: Attitudes toward Strategies to Improve Walk-On Passenger Experience by Route

	Winter Riders (n=5,471)	SEA/ BAIN (n=2,060)	SEA/ BRE (n=758)	EDM/ KIN (n=996)	MUK/ CLI (n=646)	FAU/ VAS (n=251)	FAU/ SOU (n=268)	PTD/ TAH (n=93)	KEY/ PTT (n=128)	ANA/ SAN (n=271)
Offer fare discounts or other incentives to walk-on and bike-on passengers										
Net Agree	79%	**82%**	**81%**	75%	76%	**88%**	75%	83%	69%	76%
Net Disagree	8%	8%	8%	10%	8%	7%	9%	8%	9%	9%
Provide dedicated lanes to safely drop off / pick-up passengers at terminals										
Net Agree	74%	77%	78%	73%	74%	77%	66%	68%	64%	62%
Net Disagree	8%	8%	7%	6%	9%	7%	10%	8%	12%	11%
Provide sheltered / secure bike parking at terminals										
Net Agree	58%	**62%**	59%	57%	56%	60%	52%	53%	50%	55%
Net Disagree	10%	11%	9%	9%	9%	8%	12%	6%	15%	14%
Provide or improve sidewalk connections to terminals										
Net Agree	57%	**66%**	**60%**	52%	57%	45%	53%	41%	41%	57%
Net Disagree	10%	9%	8%	10%	11%	11%	8%	16%	13%	11%
Provide or improve bicycle connections to terminals										
Net Agree	58%	**68%**	55%	57%	52%	51%	51%	51%	54%	60%
Net Disagree	11%	9%	10%	10%	13%	13%	9%	16%	12%	10%
Provide covered, separated pedestrian walkways										
Net Agree	58%	**61%**	**64%**	**60%**	58%	45%	56%	39%	52%	55%
Net Disagree	12%	11%	9%	10%	13%	**20%**	12%	**22%**	16%	15%
Provide flex car rentals on the destination side to drive										
Net Agree	57%	58%	52%	55%	55%	63%	52%	57%	48%	**69%**
Net Disagree	13%	13%	14%	12%	16%	10%	16%	16%	17%	9%
Allow passengers to reserve and pay for parking at the terminal online or by phone										
Net Agree	49%	44%	49%	52%	58%	32%	48%	42%	54%	66%
Net Disagree	18%	21%	15%	15%	15%	33%	14%	23%	20%	9%
Provide secure and covered parking with covered walkways										
Net Agree	47%	39%	55%	52%	52%	45%	45%	49%	46%	45%
Net Disagree	22%	30%	13%	19%	19%	21%	19%	18%	21%	24%
Develop a bike sharing program at terminals										
Net Agree	34%	36%	37%	33%	31%	37%	31%	29%	32%	39%
Net Disagree	18%	19%	15%	18%	19%	16%	17%	20%	24%	17%

Source: Technical Paper #5 – Attitudes toward Proposed Operational Strategies

Ability / Willingness to Change Travel Behavior

Stated Ability to Change Travel Times from Departure Time

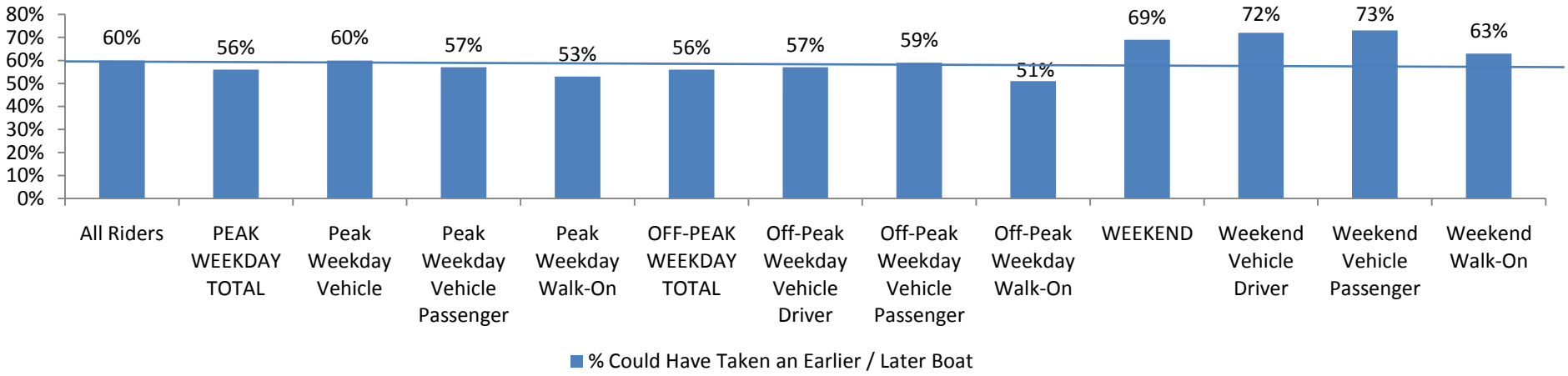
A key objective of this research was to identify the extent to which peak weekday vehicle drivers could shift their travel to off-peak travel periods. Peak hours were defined by WSF at the onset of the project as follows: eastbound weekday trips between 6:00 and 9:00 a.m.; westbound weekday trips between 3:00 and 7:00 p.m.; westbound Saturdays between 8:00 a.m. and noon; and eastbound Sunday between noon and 8:00 p.m.

Respondents to the on-board surveys were asked if they could have taken an earlier and/or later boat than the boat they were on. If they indicated they could take an earlier or later boat, they were asked to record the time. Based on the departure time for the trip they were on, we were able to determine the percentage of peak period riders (walk-on, vehicle passengers, and vehicle drivers) who could take an off-peak alternative.

The majority (60%) of all riders feel they have some flexibility to take an earlier or later boat than the one they were on for their primary trip.

- On weekdays, this percentage varies little by time of day or by boarding mode. It is, however, noteworthy that those who drive onto the ferry (both vehicle drivers and passengers) are somewhat more likely than walk-on passengers to say they have some flexibility.
- Not surprisingly, weekend riders suggest they are more flexible than weekday riders. Again, both vehicle drivers and passengers suggest they are more flexible than those walking on.

Figure 7: Overall Flexibility to Take an Earlier / Later Boat by Day / Time of Travel



Question: Could you have taken an earlier or later boat for this trip? Columns sum to more than 100 percent; multiple responses allowed.
Source: Technical Paper #3 – Shifting Peak Vehicle Demand

However, while the majority (58%) of all peak period riders and 62 percent of peak period vehicle drivers have some flexibility to catch another ferry than the one they were on, this flexibility does not translate into being able to travel outside of peak travel periods. Only 8 percent of all peak period riders and/or peak period vehicle drivers can shift from a peak to an off-peak sailing.

- Despite what seems like a very low number, encouraging peak period vehicle drivers to change to an off-peak travel period would translate to a decrease of 4,606 weekly vehicle trips in the winter and 4,894 weekly vehicle trips in the summer.

Table 16: Extent to Which Current Peak Period Riders Could Shift to Off-Peak Travel Times by Route

	All Peak Period Riders (n =6,197)	SEA/ BAIN (n=2,405)	SEA/ BRE (n=1,007)	EDM/ KIN (n=1,181)	MUK/ CLI (n= 942)	FAU/ VAS (n=272)	FAU/ SOU (n=300)	PTD/ TAH (n=90)
	All Peak Period Riders							
Can Change / Move to Off-Peak	8%	9%	9%	8%	9%	4%	10%	1%
# of Winter Trips	12,112	3,698	2,785	2,950	2,193	236	128	123
# of Summer Trips	12,928	5,048	1,661	1,631	2,566	867	1,155	-
Can Change / Stay in Peak	50%	50%	37%	54%	57%	49%	41%	54%
# of Winter Trips	74,887	25,869	8,829	12,190	13,878	7,449	2,734	3,939
# of Summer Trips	80,334	22,379	13,863	10,321	9,292	6,020	3,881	4,091
Cannot Change	42%	41%	54%	37%	34%	47%	49%	45%
# of Winter Trips	62,451	18,774	12,684	10,415	8,753	6,431	2,316	3,077
# of Summer Trips	69,847	24,669	9,329	17,992	16,015	5,336	2,358	4,636
	Vehicle Drivers							
Can Change / Move to Off-Peak	8%	8%	11%	9%	10%	7%	9%	
# of Winter Trips	**4,606**	720	650	**1,640**	**1,283**	236	77	-
# of Summer Trips	**4,894**	1,201	407	**796**	**1,321**	750	418	-
Can Change / Stay in Peak	54%	54%	42%	55%	58%	55%	45%	60%
# of Winter Trips	31,050	7,145	2,296	6,046	6,692	4,487	1,430	2,954
# of Summer Trips	29,807	6,012	1,888	8,084	7,735	3,000	1,180	1,909
Cannot Change	38%	38%	48%	36%	32%	38%	46%	40%
# of Winter Trips	21,564	4,426	2,368	4,699	4,227	2,717	911	2,216
# of Summer Trips	20,691	4,908	2,371	4,576	3,635	2,400	1,711	1,091

Source: Technical Paper #3 – Opportunities to Shift Peak Vehicle Demand

Potential to Decrease Vehicle Traffic through Use of Alternative Modes of Transportation

Comments by focus group participants suggested that at least one of the barriers to walking onto the ferry is the real or perceived lack of public transportation services. Lack of service (both real and perceived) encompasses both no service as well as lack of convenient service. To understand the extent to which this is a barrier, questions were included on the March on-board survey questionnaire to determine the extent to which riders feel they have access from their home to the ferry and from the ferry to where they need to go, and the extent to which they would be willing to use transit.

Thirty-seven percent (37%) of all winter ferry riders believe they have access to public transportation from where they live **and** to where they need to go on their destination side.

- Perceived access to transit varies widely by route. Not surprisingly, riders on the Seattle / Bainbridge, Seattle / Bremerton, and Fauntleroy / Vashon routes feel they have access from their home to get to the ferry (either directly from their home or from a park-and-ride lot) and from the ferry to their final destination.

Table 17: Access to Public Transportation by Route

	Winter Riders (n=5,471)	SEA/ BAIN (n=2,060)	SEA/ BRE (n=758)	EDM/ KIN (n=996)	MUK/ CLI (n=646)	FAU/ VAS (n=251)	FAU/ SOU (n=268)	PTD/ TAH (n=93)	KEY/ PTT (n=128)	ANA/ SAN (n=271)
Access From Home	53%	**68%**	**60%**	35%	54%	**57%**	48%	54%	42%	22%
Access to Park-and-Ride Lot	48%	51%	43%	36%	**66%**	**63%**	46%	49%	33%	14%
Access to Destination	43%	**58%**	**58%**	25%	36%	**49%**	45%	35%	21%	14%
Combined Access From / Near Home	67%	**80%**	70%	49%	74%	**82%**	67%	73%	52%	27%
Combined Access Home / Destination	37%	**53%**	**48%**	20%	32%	**45%**	41%	28%	18%	8%

Questions: Do you have public transportation available from where you live to the ferry terminal? from a park-and-ride lot near where you live to the ferry? and or from where you get off the ferry to where you typically need to go?

Source: Technical Paper #3 – Opportunities to Shift Peak Vehicle Demand

Vehicle drivers and passengers may believe that lack of access to transit on their destination side is a barrier to their use of transit.

- Only 31 percent of vehicle drivers and 36 percent of vehicle passengers believe they have access to transit on their destination side compared to 61 percent of walk-on riders. Lack of access may be a function of no service or lack of convenient transit to their destination.

Table 18: Perceived Access to Public Transportation by Boarding Mode

	Winter Riders (n = 5,471)	Vehicle Drivers (n = 2,358)	Vehicle Passengers (n = 618)	Walk-On Passengers (n = 2,495)
Access From Home	53%	46%	51%	**62%**
Access to Park-and-Ride Lot	48%	46%	45%	**53%**
Access to Destination	43%	31%	36%	**61%**
Combined Access From / Near Home	67%	61%	64%	**76%**
Combined Access Home / Destination	37%	26%	31%	**54%**

Questions: Do you have public transportation available from where you live to the ferry terminal? from a park-and-ride lot near where you live to the ferry? and/or from where you get off the ferry to where you typically need to go?

Source: Technical Paper #3 – Opportunities to Shift Peak Vehicle Demand

A specific objective of this research is to gain an understanding of the potential to reduce the number of vehicles during peak travel periods. One way to accomplish this is to change the behavior of those vehicle drivers who suggest they are willing to use public transportation and who currently have access to transit.

- Nearly one out of four (23%) peak weekday vehicle winter drivers are "very willing" to use transit and believe they have access to transit both where they live and where they need to go. Converting these drivers could result in a decrease in vehicle traffic during peak travel periods by 4,708 weekly trips.
- If it is also possible to convert the 33 percent of those peak weekday vehicle drivers who are somewhat willing and who have access to transit, vehicle traffic would decrease further by 4,188 weekly trips.

Table 19: Vehicle Drivers' Willingness to Use Transit by Day / Time of Travel

	Vehicle Drivers (n =2,358)	Peak Weekday (n = 1,156)	Off-Peak Weekday (n = 619)	Weekend (n = 583)
% Very Willing	23%	23%	20%	26%
% Have Access to Transit	40%	43%	42%	33%
Number of Weekly Vehicle Trips	13,782	4,708	5,535	3,539
% Somewhat Willing	27%	26%	25%	32%
% Have Access to Transit	32%	33%	28%	35%
Number of Weekly Vehicle Trips	13,468	4,188	4,643	4,637
Total Potential Reduction in Weekly Vehicle Trips	27,250	8,896	10,178	8,176

Question: Thinking about different ways of getting to the ferry how willing would you be to: use public transportation and walk on?

Source: Technical Paper #3 – Opportunities to Shift Peak Vehicle Demand

Proposed Strategies to Encourage Use of Transit

Consistent with the statements made in the focus groups, winter riders are positive toward any and all improvements to transit service and connections. The majority (60% or more) of all riders agree with all of the proposed improvements.

- They most clearly support better coordination of transit and ferry schedules to allow adequate time for riders to transfer. They also show strong support for providing new transit routes serving the ferries with limited or non-stop service to major destinations.

- This is notable among riders on the Fauntleroy / Vashon and Point Defiance / Tahlequah routes. Again, this is consistent with the focus group research as well as many of the written comments on the surveys. Riders on these routes are very interested in improvements to transit that would enable them to walk onto the ferry; currently the majority drives.

Table 20: Agreement / Disagreement with Strategies related to Transit Connections / Service by Route

	Winter Riders (n=5,471)	SEA/ BAIN (n=2,060)	SEA/ BRE (n=758)	EDM/ KIN (n=996)	MUK/ CLI (n=646)	FAU/ VAS (n=251)	FAU/ SOU (n=268)	PTD/ TAH (n=93)	KEY/ PTT (n=128)	ANA/ SAN (n=271)
	Coordinate transit and ferry schedules to leave adequate time for passengers to transfer									
Net Agreement	82%	83%	83%	79%	78%	**90%**	82%	**93%**	78%	78%
Net Disagreement	5%	4%	5%	5%	7%	2%	5%	3%	8%	5%
	Provide new transit routes to serve the ferry with limited or non-stop service to major destinations									
Net Agreement	71%	69%	71%	70%	67%	**83%**	73%	**80%**	65%	74%
Net Disagreement	6%	6%	6%	6%	8%	4%	6%	5%	12%	7%
	Provide more park-and-ride lots with good transit connections to ferry terminals									
Net Agreement	70%	70%	69%	72%	68%	75%	67%	74%	72%	69%
Net Disagreement	7%	7%	7%	6%	8%	5%	8%	9%	7%	7%
	Provide access for buses to drop off / pickup passengers closer to the terminals									
Net Agreement	67%	65%	68%	**70%**	63%	71%	62%	68%	**75%**	68%
Net Disagreement	8%	8%	7%	7%	10%	6%	8%	9%	9%	6%
	Create dedicated lanes for buses to access terminals and drop off passengers									
Net Agreement	61%	**63%**	**63%**	60%	59%	**64%**	52%	63%	55%	51%
Net Disagreement	9%	9%	7%	9%	9%	10%	13%	15%	13%	12%

Source: Technical Paper #5 – Attitudes toward Proposed Operational Strategies

Strategies that Could Motivate Vehicle Drivers to Change their Travel Behavior

The Mode Shift Sensitivity Research completed following the summer wave of data collection provides additional insight into riders' willingness to change travel modes during peak travel periods through a combination of disincentives (higher prices to travel during these times) and incentives (shorter trip length, improved access to transit and/or other means to get to / from the ferries, and improvements to walk-on terminal access).

Eleven percent (11%) of drivers would not change their travel behavior with any combination of the features and benefits shown.

The balance might consider walking on instead of driving if offered the right combination of incentives and disincentives. This research clearly illustrates what is most important in vehicle drivers' mode choice decision.

Three factors clearly dominate drivers' mode choice decision. These include (listed in order of importance):

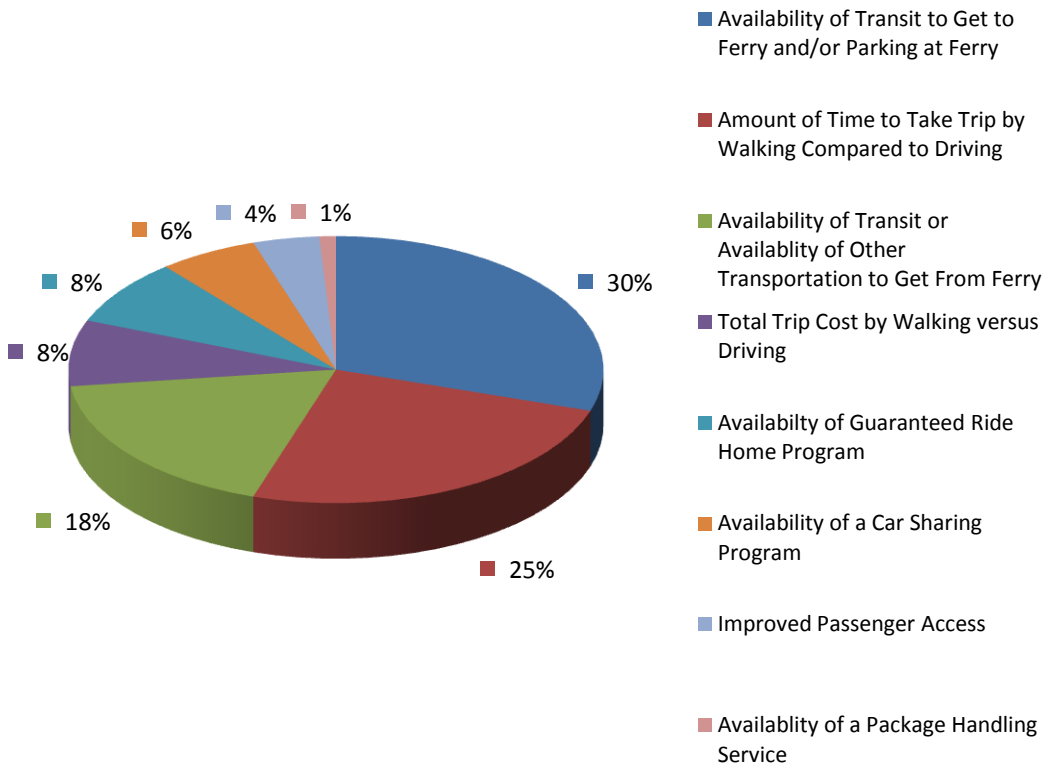
- The availability of transit or another alternative such as access to park-and-ride lot or parking at the ferry on their origin.
- The amount of time to take the total trip walking onto the ferry compared with the amount of time for a comparable drive-on trip.
- The availability of transit or another alternative to get from the ferry to their final destination.

It is noteworthy that the total cost of the trip is only one-third as important as the total amount of time the trip would take – that is, cost of time clearly preempts cost of travel.

There are **few** significant or practical differences in the order and/or magnitude of what is important between vehicle drivers by route and/or trip purpose.

- That is, there is nearly universal agreement among all riders that the three most important factors in the mode choice decision are the ones listed above.

Figure 8: Importance of Different Incentives / Disincentives in Mode Choice Decision



Source: Technical Paper #3 – Opportunities to Shift Peak Vehicle Demand

When evaluating the choices for how to get from their home to the ferry (the most important consideration), riders clearly prefer transit from home and/or parking at the terminal over driving to a park-and-ride lot and then taking transit.

- This is consistent with other transit research that shows that once people get into their cars, they prefer to continue to their destination, rather than driving and parking and then in essence taking a second trip. However, this does not factor in the potential cost of the convenient parking at the terminal versus potentially free parking at a park-and-ride lot.

What is noteworthy is the finding that when forced to choose between transit from home to parking at the terminal, riders show a slight preference for transit – 34 percent prefer transit compared to 28 percent who prefer parking at terminal.

Figure 9: Extent to Which Different Options to Get from Home to Terminal Would Encourage Riders to Walk On instead of Driving

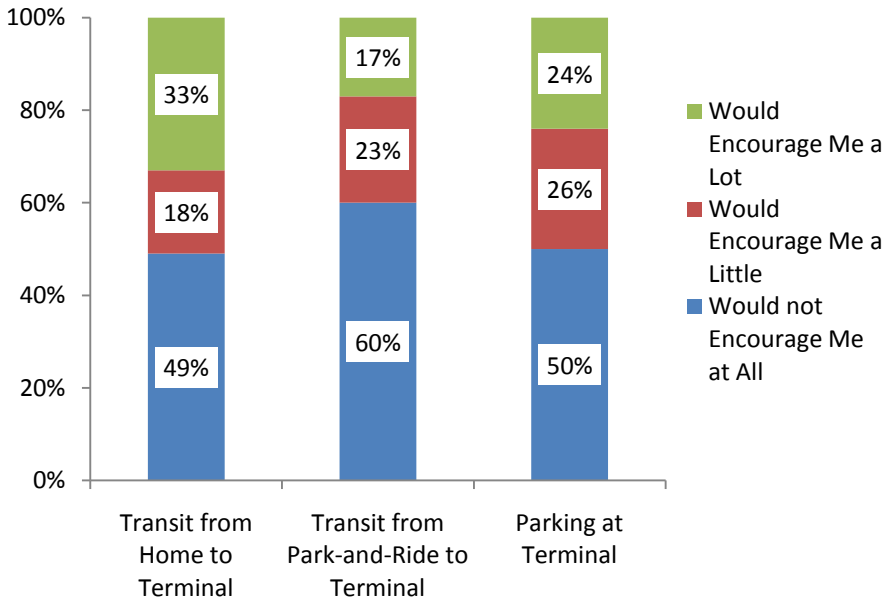
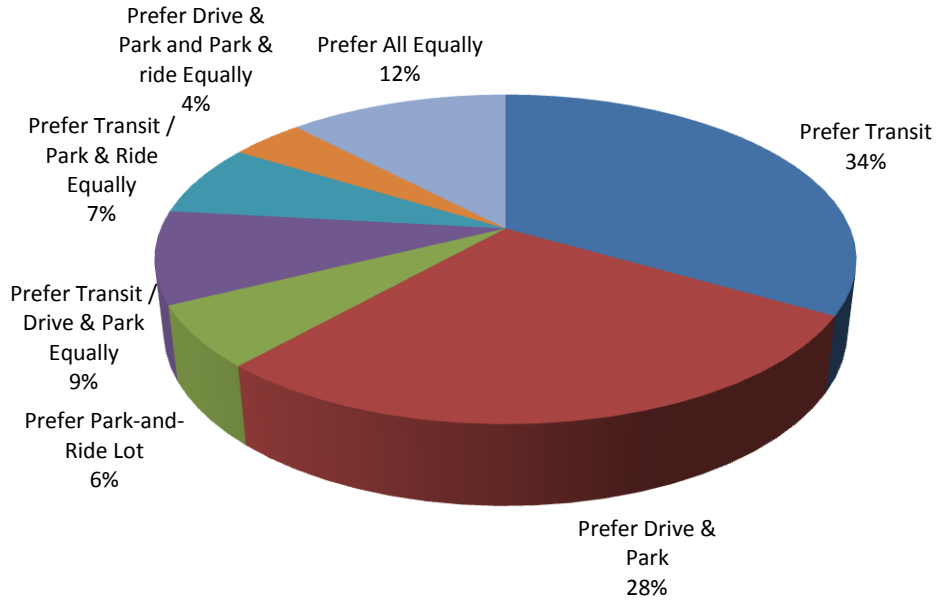


Figure 10: Preferred Option to Get from Home to Terminal



Source: Technical Paper #3 – Opportunities to Shift Peak Vehicle Demand

Attitudes Surrounding Fares

Fares Perceived As Reasonable / Not Overly Expensive

While riders generally do not want to see any increase in fares, most recognize that fare increases are necessary. Four questions were included in the questionnaire to identify what riders perceive to be a reasonable or "not expensive" fare. Respondents were asked to provide fare amounts above or below the current posted fare for the route that they thought were "reasonable," "expensive but they would still ride," "so expensive that they would decrease the frequency with which they ride," or "so low that they would question the quality of service." They provided data for both vehicle and walk-on fares regardless of their boarding mode. The weighted average of their responses to each set of these four questions (one for vehicle and one for walk-on) represents the target fare increase or decrease. **This calculation represents the percentage fare increase or decrease** over the current, non-discounted one-way fare that **riders feel is "not expensive"** and at which **resistance to a fare increase would be low.** While this analysis does provide some insights into riders' overall sensitivity to fare increases, additional research was conducted using conjoint analysis to provide a more reliable measure of overall elasticity to a fare increase and is reported after these findings.

Overall, WSF riders are clearly more willing to accept an increase in walk-on fares than an increase in vehicle fares.

- Looking at all riders (winter and summer combined), riders feel that any increase in vehicle fares would be "expensive." In fact, WSF riders suggest that a decrease in vehicle fares equivalent to 1.1% below the posted, non-discounted fares would bring the fare to the point where it would be "not expensive."
- On the other hand, riders suggest that an increase of 5.3 percent over the posted, non-discounted walk-on fares would be "not expensive" and a point where resistance to the fare increase would be low.

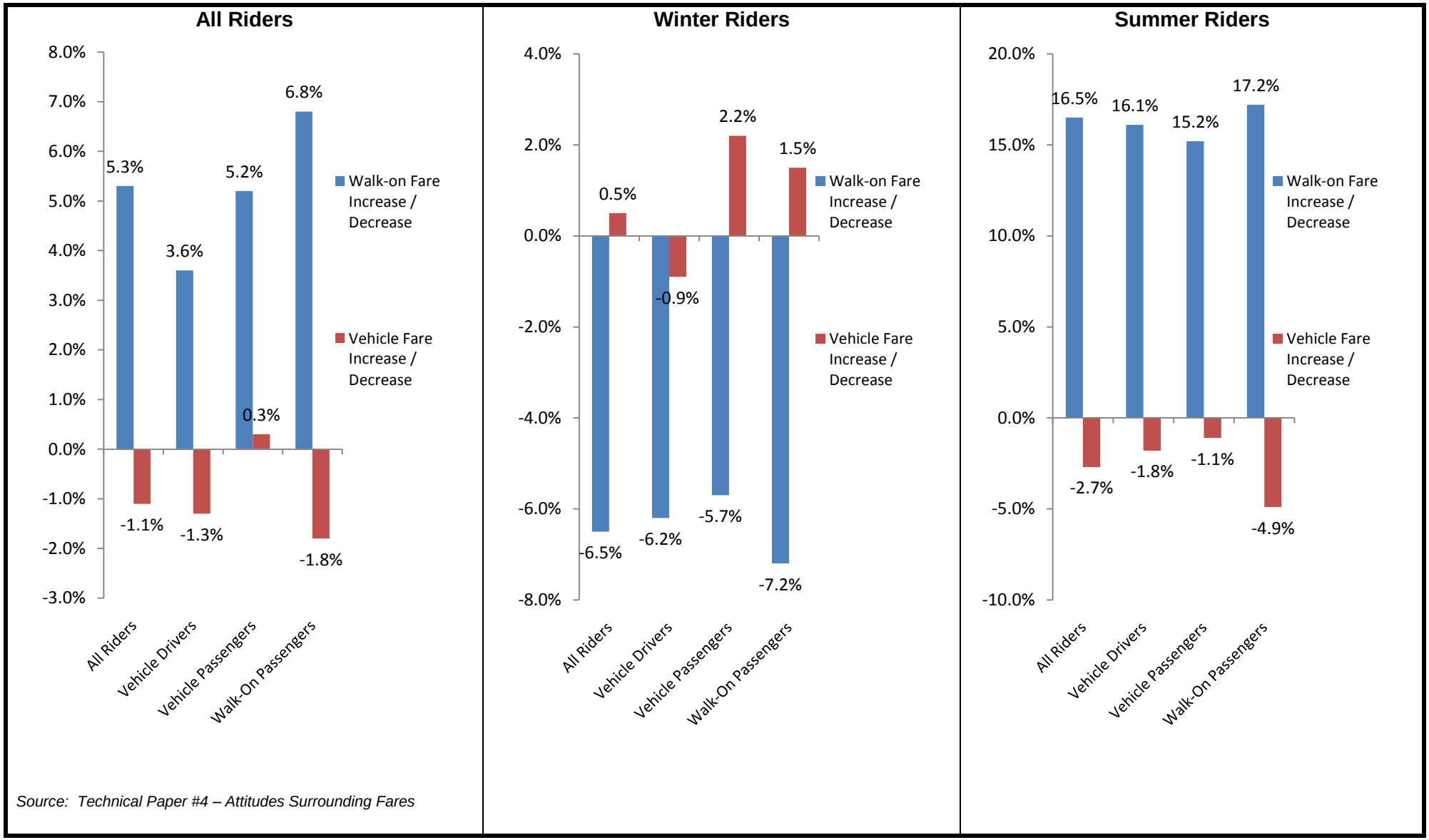
Reflecting the summer surcharge, **summer vehicle drivers are somewhat more sensitive to a vehicle fare increase**. However, the difference in vehicle fare sensitivity between summer and winter vehicle drivers is relatively small compared to the difference in walk-on fare sensitivity, suggesting that while they may not like the summer surcharge, they recognize the need for it.

- Winter vehicle drivers feel that vehicle fares would need to decrease slightly – by 0.9 percent – to be "not expensive." For summer vehicle drivers this figure is a 1.8 percent decrease.

Winter walk-on passengers are more sensitive to a walk-on fare increase than are summer walk-on riders, suggesting that it could be possible to institute a summer surcharge for walk-on passengers on all routes similar to that charged for vehicles.

- Winter walk-on passengers suggest that walk-on fares would need to decrease by 7.2% to be considered "not expensive." On the other hand, summer walk-on passengers suggest that walk-on fares could increase by as much as 17.2% and still be considered "not expensive."

Figure 11: % Increase / Decrease over Posted, Non-Discounted Fares that are "Not Expensive"



Source: Technical Paper #4 – Attitudes Surrounding Fares

"Not Expensive" Vehicle Fares by Route

Vehicle drivers on the **high recreational travel routes** are the **least sensitive** to an overall vehicle fare increase.

- During the winter months, vehicle drivers on the Port Townsend / Keystone route suggest that vehicle fares could increase by nearly 6 percent. During the summer, vehicle drivers on this route suggest that vehicle fares could increase by 13 to 14 percent and still be considered "not expensive."
- On Anacortes / San Juans, vehicle fares could increase by 13 to 14 percent in both winter and summer and still be considered "not expensive."
- On the Anacortes / Sidney route, vehicle fares could increase by nearly 23 percent over current levels.

On the other major routes:

- Winter vehicle drivers on the three South Sound routes are by far the most likely to feel that a discount is required to bring vehicle fares to a "not expensive" level, suggesting vehicle fare discounts of 14 to 18 percent. Reflecting the significant increase in recreational travel, summer vehicle drivers on the Fauntleroy / Vashon route are much less fare sensitive to a fare increase than are their winter counterparts.
- Seattle / Bainbridge, Edmonds / Kingston, and Mukilteo / Clinton vehicle drivers are the **least sensitive** to an increase in vehicle fares, suggesting an overall decrease of 1 to 3 percent in vehicle fares.
- Winter vehicle drivers on the Seattle / Bremerton route also appear to feel that the current fare is "not expensive." On the other hand, summer vehicle drivers, are very sensitive; riders suggest vehicle fares would need to decrease by nearly 11 percent to be considered "not expensive."

"Not Expensive" Walk-on Fares by Route

Similar to vehicle drivers, walk-on passengers on the **high recreational travel routes** are the **least sensitive** to an overall walk-on fare increase.

- Both winter and summer walk-on passengers on the Port Townsend / Keystone route are relatively insensitive to a walk-on fare increase, suggesting that walk-on fares could increase by 25 to 26 percent over the posted, non-discounted rate and still be considered "not expensive."
- Only summer walk-on passengers on the Anacortes / San Juan routes are insensitive to a walk-on fare increase, suggesting that fares could increase by as much as 27 percent over the non-discounted fare. Winter walk-on passengers are sensitive to an increase in walk-on fares, saying that if fares increased by as little as 1 percent over the non-discounted fares, the fare would no longer be "not expensive."
- Walk-on passengers on the Anacortes / Sidney route are the least sensitive to a fare increase saying that the non-discounted fare could increase by more than 39 percent and not be expensive.

During the winter months, and with the exception of Fauntleroy / Vashon and Point Defiance / Tahlequah riders, there are relatively few differences in fare sensitivity between walk-on passengers on the primarily non-recreational routes.

- Most winter walk-on passengers suggest that walk-on fares would need to be discounted by 7 to 10 percent to be considered "not expensive."
- Point Defiance / Tahlequah and Fauntleroy / Vashon walk-on passengers are less fare sensitive, suggesting discounts of 2 to 4 percent.

There are significant differences during the summer.

- Reflecting the increase in recreational travel, walk-on passengers on the Mukilteo / Clinton, Fauntleroy / Vashon, and Fauntleroy / Southworth routes are less sensitive to an increase in walk-on fares than are those on the Seattle / Bainbridge, Seattle / Bremerton, and Edmonds / Kingston ferries.

Figure 12: % Increase / Decrease over Posted, Non-Discounted Vehicle Fares that is "Not Expensive" by Route

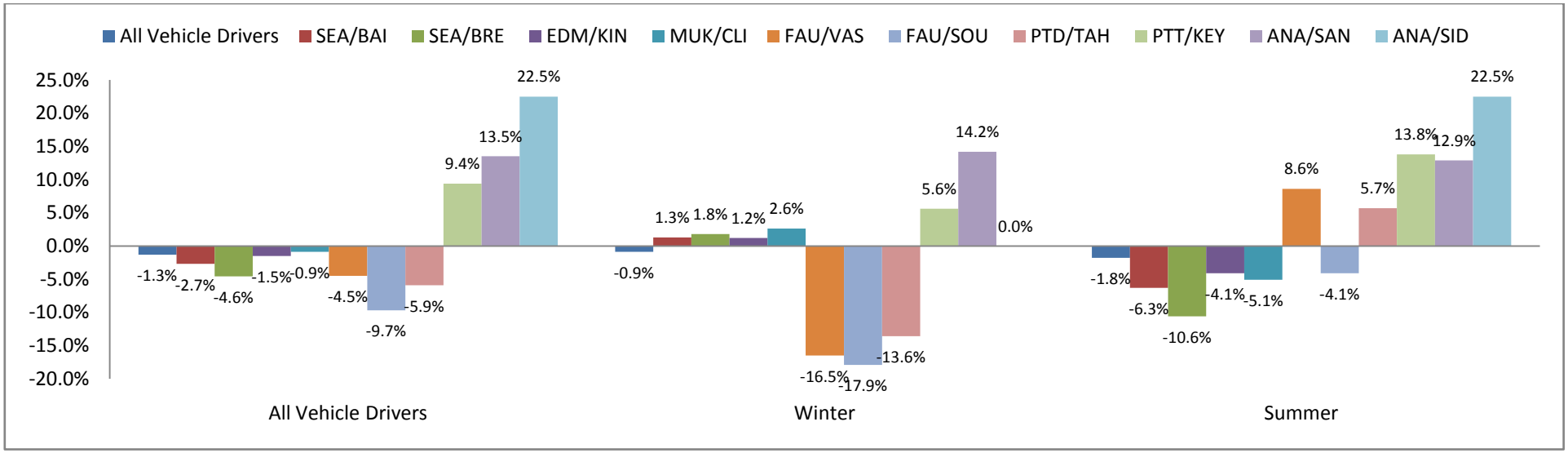
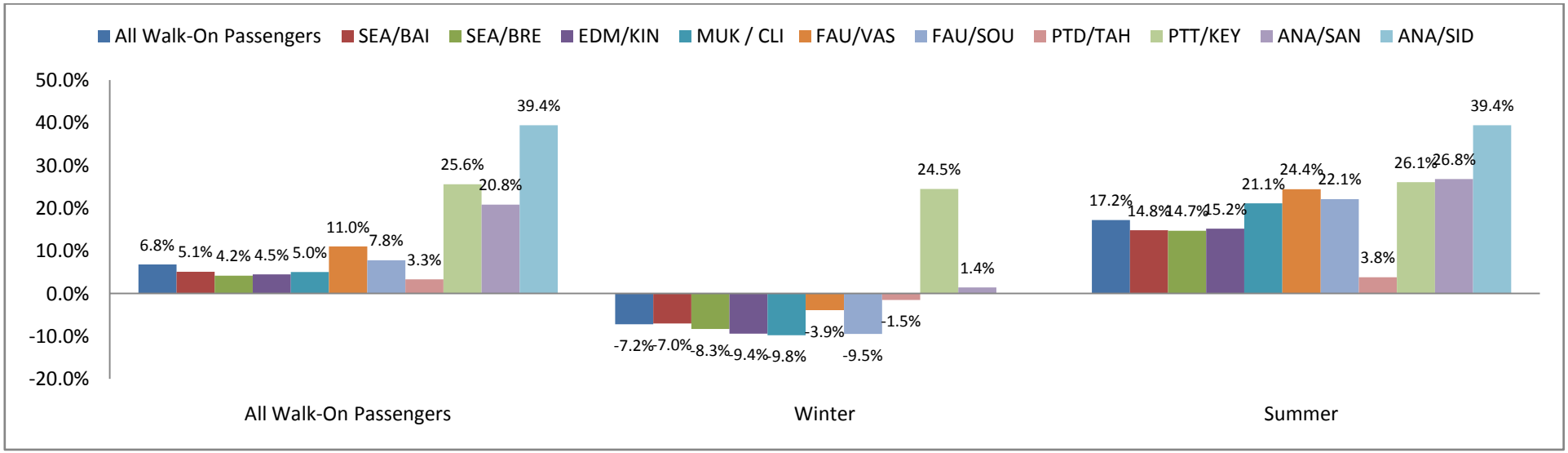


Figure 13: % Increase / Decrease over Posted, Non-Discounted Walk-On Fares that is "Not Expensive" by Route



Overall Elasticity to a Fare Increase

While the van Westendorp price sensitivity analysis provides some insights into riders' overall sensitivity to fare increases, additional research was conducted using conjoint analysis to provide a more reliable measure of overall elasticity to a fare increase. The structure of the choice-based conjoint exercise was developed collaboratively among ORC-NW, WSTC, WSF, and other consultants working for those entities. Moreover, the results of this analysis were carefully reviewed by all potential users. Results from this additional research provide a more accurate picture of actual fare elasticity.

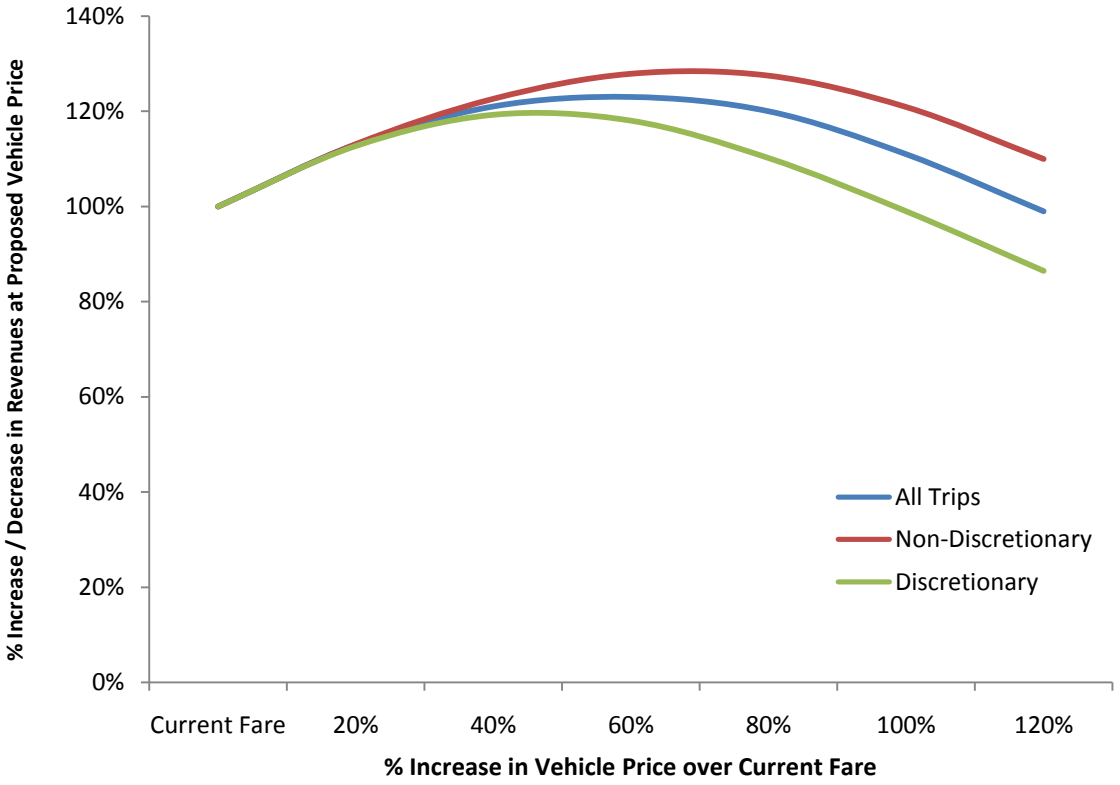
This analysis clearly shows that for vehicle drivers who drive onto the ferries during peak travel periods, demand is inelastic at and above the current price points.

Total revenue will actually increase as fares are increased, as the revenues gain from increased fares more than offsets any drop in vehicle ridership resulting from the increased fares. In fact, vehicle fares could increase by as much as 60 percent for all trips before declines in ridership offset the gains in revenue resulting from the increased fares (top of the blue curve).

- Vehicle fares could increase by as much as 45 percent for discretionary travel before declines in ridership offset the gains in revenue resulting from the increased fares (top of the green curve).
- Vehicle fares could increase by as much as 70 percent for non-discretionary travel before declines in ridership offset the gains in revenue (top of the red curve).

While no one is anticipating a fare increase at these levels, it is clear that more modest across-the-board increases will not have an adverse effect on total revenue, and in fact will increase total system revenue.

Figure 14: Revenue Analysis for Drive-On Peak Weekday Travel by Journey Type



The data from the Price Sensitivity Study also allows us to look at how riders' behavior would change when presented with different fare options. They could choose to either continue to drive on during peak hours, drive on an earlier or later boat, walk on, or not take the trip at all.

When presented with the different travel options under the current price, 63 percent of vehicle drivers indicate that they would continue to drive on during peak travel periods.

- It is noteworthy that for the current fare, 20 percent of those who currently drive on for the trip they had described say they would choose to walk onto the ferry.

If fares were increased across the board by 20 percent, there is some shift in peak drive-on travel behavior.

- At a 20 percent across-the-board fare increase, the percentage of peak vehicle drivers who would continue to drive on during peak times drops slightly from 63 to 58 percent. Therefore, a 20 percent increase in fares could potentially decrease peak drive-on traffic by 5 percentage points or 9 percent.
- If both vehicle and walk on fares are increased by 60 percent, the impact on peak drive-on demand is more dramatic. The percentage of peak vehicle drivers who would continue to drive on at peak drops from 63 to 45 percent or the equivalent of a decrease in peak vehicle demand of 28 percent.

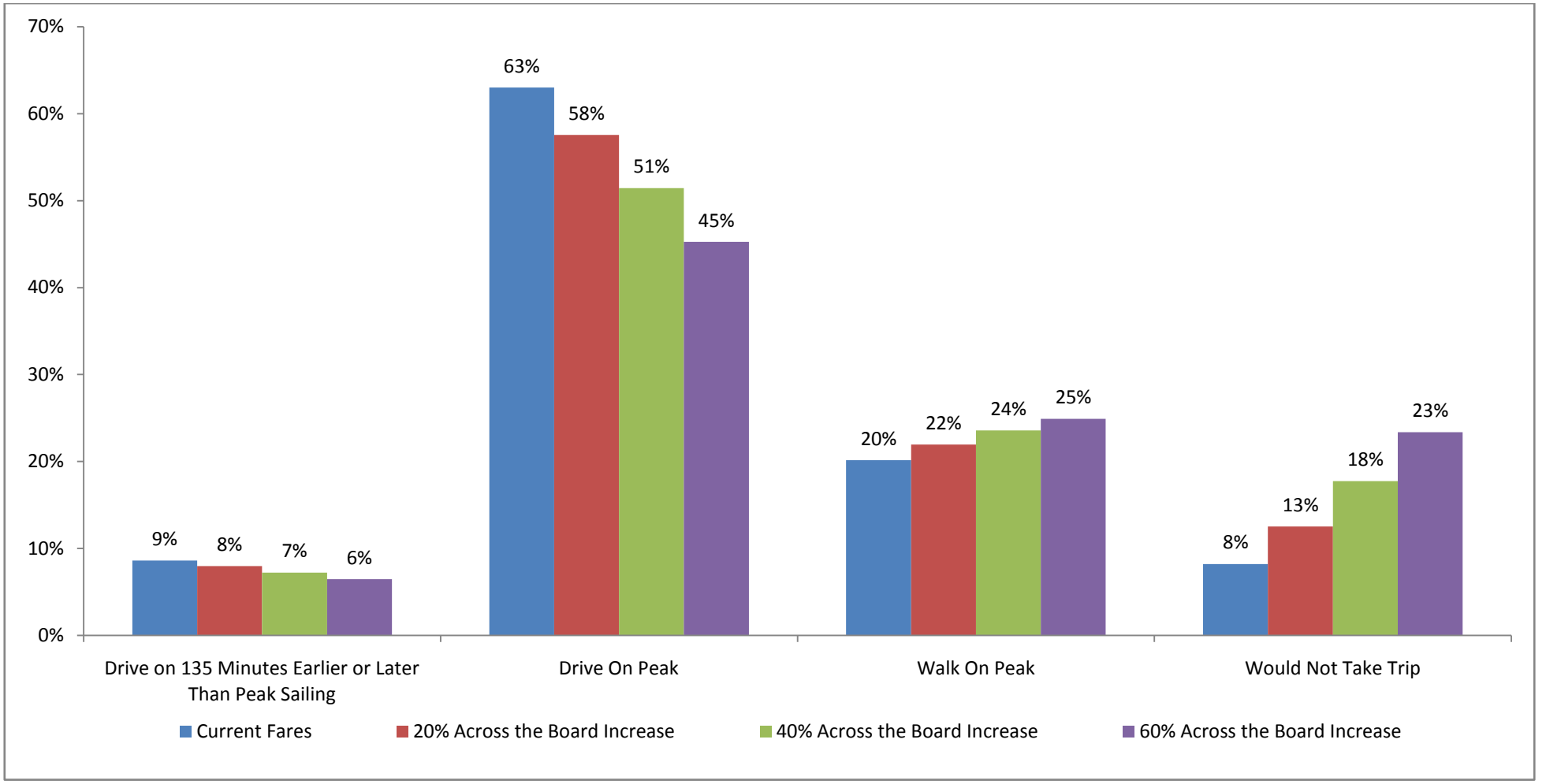
This analysis further suggests that an across the board fare increase would have little impact on walk-on traffic.

- The percentage of peak vehicle drivers that would shift to walking on increases from 20 percent under the current (base case) scenario fare to 25 percent at a 60 percent fare increase. Therefore, peak vehicle drivers would not choose to walk on more if all fares increase at the same rate across the board. This would suggest that other non-fare factors have a greater influence in vehicle drivers' decision to drive versus walk onto the ferries.

On the other hand, an across the board fare increase clearly influences riders' decisions whether to take the trip at all.

- A 20 percent across-the-board increase in fares could result in a 53 percent increase in the percentage of riders choosing not to take the trip – from 8 percent under the current fare (base case) scenario to 13 percent. When faced with a 60 percent increase, the percentage of riders saying they would not take the trip nearly triples – increasing from 8 percent under the current base case scenario to 23 percent.

Figure 15: Likely Travel Behavior under an Across-the-Board Fare Increase (Vehicle and Walk-On)



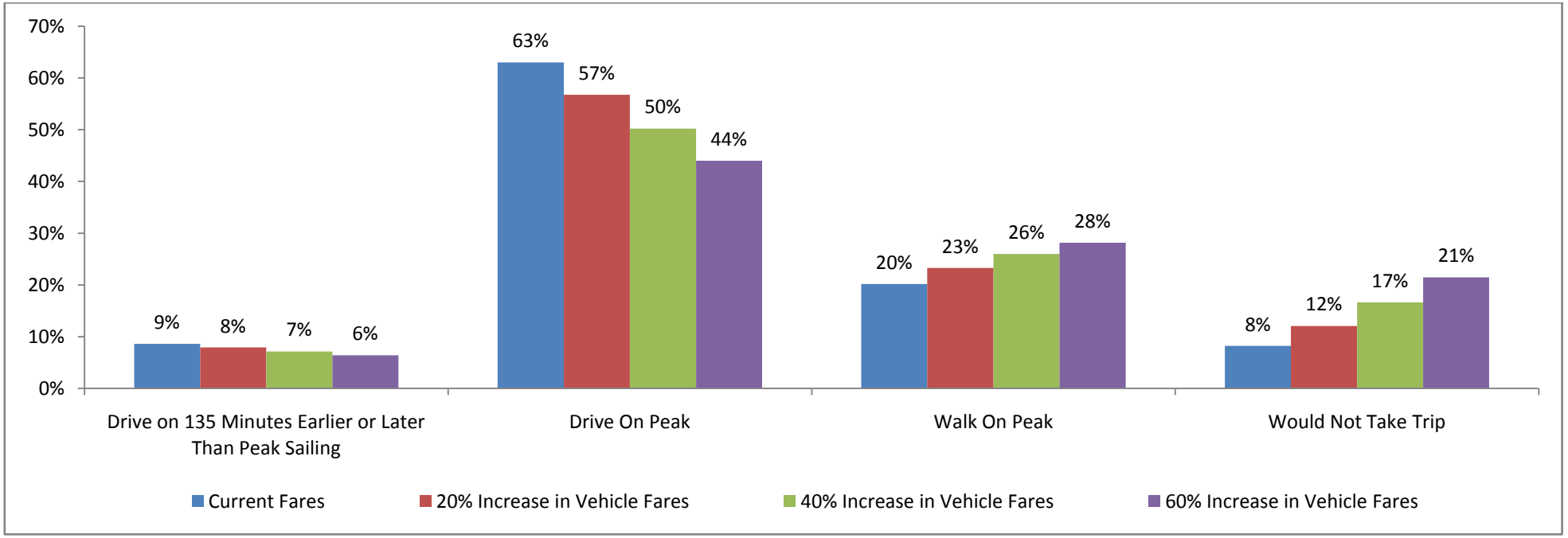
Increasing vehicle fares while maintaining walk-on fares has approximately the same impact on peak drive-on travel behavior as the across the board fare increase.

- The potential drop in peak vehicle traffic with a 20 percent increase in vehicle fares is 11 percent compared with 9 percent drop for an across the board fare increase. With a 60 percent increase in vehicle fares, the potential change in peak drive-on travel is 30 percent compared with 28 percent for an across the board fare increase.

Increasing vehicle fares while maintaining walk-on fares has the positive effect of increasing the percentage of walk-on riders.

- At a 20 percent increase in vehicle fares, the percentage of peak vehicle drivers who would potentially choose to walk on could potentially increase by 15 percent compared to the 9 percent increase that would occur if walk-on fares also increased.
- At a 60 percent increase in vehicle fares, the percentage of peak vehicle drivers who would potentially choose to walk on could potentially increase by 40 percent compared to 24 percent if walk-on fares were also increased.

Figure 16: Likely Travel Behavior if Vehicle Fares are Increased and Walk-On Fares are Held at Current Levels



Source: Technical Paper #4 – Attitudes Surrounding Fares

Attitudes toward Proposed Tariff Policies to Manage Vehicle Demand

Some states and countries have experimented with pricing strategies to discourage vehicle traffic on highways during peak travel times. Two questions were included in the March on-board survey to measure the extent to which riders agree or disagree with pricing strategies to discourage drive-on traffic during peak travel periods and/or to encourage shifts to off-peak travel periods.

All WSF winter riders have clearly negative attitudes toward the proposal to have vehicle drivers who drive on the ferries during peak travel times pay a higher fare. Their opinions are more divided as to whether vehicle drivers should receive a discount if they drive on during off-peak hours.

- Just over two out of five (21%) winter riders agree with both proposals – i.e., vehicle drivers who drive on during peak hours should pay a higher fare while those driving on during off-peak hours should receive a discount. An additional 16 percent agrees with the proposal that drivers during off-peak hours should receive a discount but disagree with charging those driving on during peak hours a premium.

It is not surprising that peak vehicle drivers are more likely to disagree with the proposal to have those driving onto the ferry during peak travel hours pay a higher fare.

- Only 12 percent of peak weekday winter vehicle drivers agree with the full concept of congestion pricing – discounts for those driving on during off-peak and higher fares for those driving on during peak travel times.

Table 21: Attitudes toward Proposed Tariff Policies to Manage Vehicle Demand by Route

	Winter Riders (n=5,471)	SEA/ BAIN (n=2,060)	SEA/ BRE (n=758)	EDM/ KIN (n=996)	MUK/ CLI (n=646)	FAU/ VAS (n=251)	FAU/ SOU (n=268)	PTD/ TAH (n=93)	KEY/ PTT (n=128)	ANA/ SAN (n=271)
	All Riders									
	Passengers driving a vehicle onto ferry during off-peak travel hours receive a discount									
Net Agree	43%	45%	41%	45%	44%	35%	41%	33%	35%	50%
Net Disagree	38%	35%	37%	38%	41%	**46%**	34%	**51%**	41%	29%
	Passengers driving a vehicle onto ferry during peak travel hours pay a higher fare									
Net Agree	26%	30%	26%	26%	24%	15%	24%	17%	23%	29%
Net Disagree	59%	54%	57%	59%	62%	72%	55%	72%	59%	54%
	Peak Weekday Vehicle Drivers									
	Passengers driving a vehicle onto ferry during off-peak travel hours receive a discount									
Net Agree	35%	40%	38%	33%	30%	25%	36%	36%	41%	45%
Net Disagree	48%	47%	45%	49%	54%	59%	41%	55%	36%	36%
	Passengers driving vehicle onto ferry during peak travel hours pay a higher fare									
Net Agree	15%	18%	11%	12%	15%	14%	10%	13%	19%	17%
Net Disagree	75%	73%	80%	77%	73%	80%	81%	84%	62%	70%

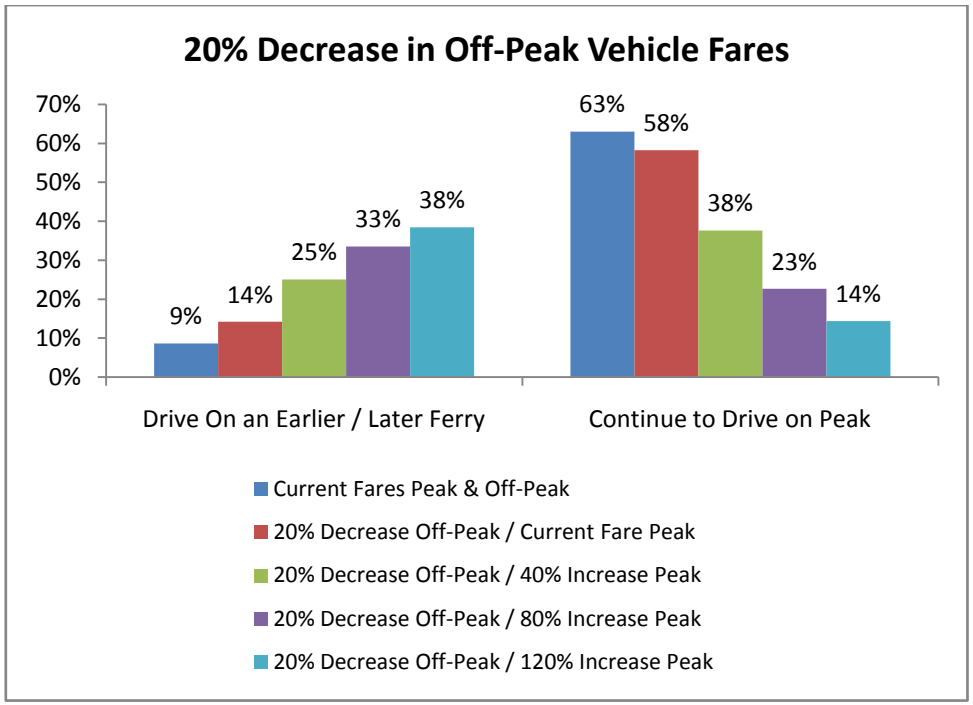
Source: Technical Paper #3 – Opportunities to Shift Peak Vehicle Demand

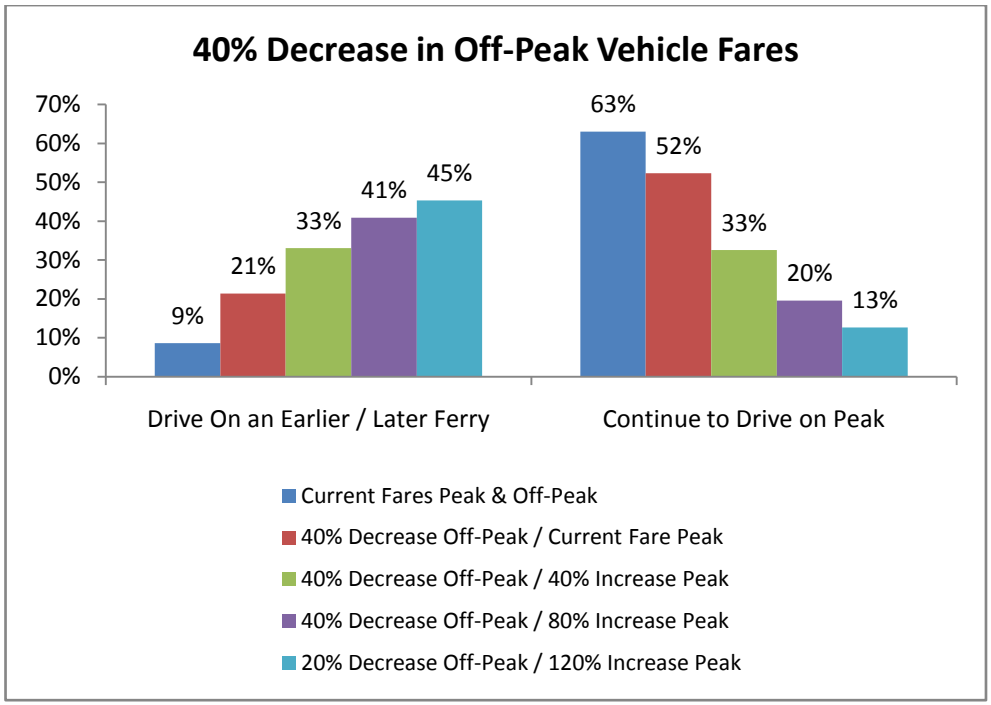
The Price Sensitivity Research also allows us to explore the potential impact on peak drive-on traffic if a congestion pricing program is introduced. Specifically, we looked at what would happen if current fares to drive on were decreased from their current levels by 20 percent and vehicle fares during peak hours are increased.

Increasing peak period vehicle fares while decreasing vehicle fares from their current levels during off-peak periods has an even more dramatic effect on drive-on travel behavior during peak periods.

- If peak period vehicle fares are increased by 40 percent and off-peak vehicle fares are decreased by 20 percent, the decrease in the percentage of peak drivers choosing to drive on is 38 percent – a 40 percent change from the current base scenario. At the same time, the percentage choosing to drive on an earlier or later ferry more than doubles – from 9 percent under the current base scenario to 25 percent.
- Further decreasing vehicle fares to 40 percent of current vehicle fares during off-peak hours would have little additional effect. While the percentage of peak drivers who would choose to continue driving on during peak travel periods does decrease (from 38 percent to 33 percent), this only represents a further reduction of 8 percentage points in peak drive-on traffic from the base scenario.

Figure 17: Likely Travel Behavior if Peak Period Vehicle Fares are Increased and Off-Peak Vehicle Fares are Decreased





Source: Technical Paper #4 – Attitudes Surrounding Fares

Attitudes toward Quality and Perceived Value of Service

While not a primary purpose of this research, two questions were included to provide insight into riders' attitudes toward the overall quality and perceived value of service provided by WSF. This information is important because often the perception of riders' attitudes toward the system is largely inferred through public meetings and other events. These questions were also asked on WSF's 2002 Passenger Amenity and Customer Satisfaction Survey and hence provide a reliable measure of change in customer attitudes over time.

Quality of Service

The majority (68%) of WSF riders are satisfied with riding the ferries. While satisfaction ratings are high, it should be noted that one out of five (20%) riders are dissatisfied.

- There has been relatively little change in rider satisfaction since last measured in 2002. Overall, 74 percent of riders were satisfied with riding WSF in 2002 compared to 68 percent of all riders in 2008. This is significant in the light of changes to service as well as fare increases since that time.

There are some differences in rider satisfaction by route.

- Riders on the Anacortes / Sidney route are by far the most satisfied riders – 79 percent net satisfaction with 35 percent of all riders saying they are "extremely satisfied." Among the other routes, riders on the Seattle / Bainbridge route are the most satisfied overall – 75 percent net satisfaction. Other routes with above-average satisfaction ratings include: Edmonds / Kingston (72%) and Mukilteo / Clinton (71%).
- Of particular note are the relatively high levels of dissatisfaction among Point Defiance / Tahlequah and Fauntleroy / Vashon riders – 44 percent and 36 percent, respectively. This is more than twice the levels noted on all other routes, with the exception of Seattle / Bremerton.

Table 22: Satisfaction with WSF by Route

	All Riders (n=13,130)	SEA/ BAIN (n=4,600)	SEA/ BRE (n=1,567)	EDM/ KIN (n=2,413)	MUK/ CLI (n=1,789)	FAU/ VAS (n=503)	FAU/ SOU (n=547)	PTD/ TAH (n=147)	KEY/ PTT (n=432)	ANA/ SAN (n=923)	ANA/ SID (n=209)
Net Satisfied	68%	**75%**	63%	72%	71%	49%	66%	43%	69%	71%	**79%**
Neutral	12%	9%	13%	13%	13%	14%	13%	12%	11%	15%	7%
Net Dissatisfied	20%	16%	**24%**	16%	15%	**36%**	22%	**44%**	19%	13%	14%
Mean	3.70	**3.86**	**3.52**	**3.80**	3.79	3.17	3.59	3.01	3.73	**3.80**	**3.99**

Question: Overall, how satisfied are you with Washington State Ferries?
Source: Technical Paper #6 – Attitudes Toward WSF

Perceived Value of Service

Nearly three out of five (56%) WSF riders feel that the value of riding the ferry for the fare they pay is good.

- Despite the fare increases over the past years, more riders today feel that WSF represents a good value than in 2002. In 2002, 54 percent of WSF riders rated the value of service as good. This figure is measured at 56 percent in 2008.

As with customer satisfaction, there are some differences in perceived value of service by route.

Table 23: Perceived Value of Service by Route

	All Riders (n=13,130)	SEA/ BAIN (n=4,600)	SEA/ BRE (n=1,567)	EDM/ KIN (n=2,413)	MUK/ CLI (n=1,789)	FAU/ VAS (n=503)	FAU/ SOU (n=547)	PTD/ TAH (n=147)	KEY/ PTT (n=432)	ANA/ SAN (n=923)	ANA/ SID (n=209)
Net Good Value	56%	60%	56%	57%	61%	35%	57%	35%	**71%**	59%	**76%**
Neutral	30%	29%	29%	30%	28%	35%	29%	37%	21%	32%	20%
Net Poor Value	14%	11%	**15%**	13%	11%	**30%**	13%	**29%**	8%	9%	4%
Mean	3.55	3.65	3.51	3.56	3.66	3.02	3.56	3.03	**3.86**	3.66	**4.00**

Question: Considering your personal experience with the ferries, which of the following phrases best describes the value, to you, of riding Washington State Ferries?
Source: Technical Paper #6 – Attitudes Toward WSF

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